Australian Government

Department of Education, Employment and Workplace Relations

UEPOPS420A Coordinate the Network/System

Release: 1

UEPOPS420A Coordinate the Network/System

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

This unit deals with the skills and knowledge required for the co-ordination of a network/system. Systems may be interconnected, remote or isolated.

Application of the Unit

Application of the Unit **3**)

This unit is intended to augment formally acquired competencies.

License to practise **3.1**)

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite Unit(s) **2**)

Competencies **2.1**)

There are no prerequisite units.

Employability Skills Information

Refer to the Evidence Guide

Elements and Performance Criteria Pre-Content

5) Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan and prepare network operations	1.1	Information and documentation to determine network/system status is assessed and evaluated in accordance with system requirements
		1.2	Network/system and associated equipment operational pre-requisites are determined in accordance with enterprise/system procedures
		1.3	Work priorities are determined to suit network circumstances in accordance with enterprise/system procedures
		1.4	Network/system limitations and performance due to location and external influences are identified
		1.5	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training.
2	Coordinate network /system.	2.1	Network/system is operated in accordance with enterprise/system operating procedures
		2.2	Network/system demand is monitored to maintain quality of supply standards in

ELEMENT		PERFORMANCE CRITERIA	
			accordance with requirements and to maintain stability and system integrity
		2.3	Network/system load shedding sequence and priorities are monitored to ensure system integrity
		2.4	Corrective actions to rectify deviations are implemented following analysis of data in accordance with system procedures
		2.5	Resources required to meet system requirements are identified and coordinated in accordance with system procedures
		2.6	Where required, operations are carried out in consultation with team members
3	Interpret and respond to network/ system faults or incidents	3.1	Causes of abnormal network/system operating conditions are identified by interpreting the technical and operational information in a logistical and sequential manner
		3.2	Operation of protection systems are identified and assessed to evaluate the nature and cause of fault conditions.
		3.3	Communication may be established with other authorities and/or key stakeholders to identify nature/source of system interference
		3.4	Corrective action is taken in accordance with enterprise/system procedures
		3.5	Network/system integrity and safety are maintained through consultation with appropriate personnel and reference to plant technical, operational documentation and contingency plans
4	Complete documentation	4.1	Documentation is updated, log sheets maintained and equipment/system problems, movements abnormalities and status are reported and logged in accordance with enterprise/site procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

6) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired co-ordinating the network/system.

The extent of the Essential Knowledge and Associated Skills required follows:

Evidence shall show that knowledge has been acquired for safe working practices of:

- Relevant OHS regulations
- Relevant statutory legislation
- Relevant enterprise/site safety procedures
- Enterprise/site emergency procedures and techniques
- Plant status
- Relevant plant and equipment, it's location and operating parameters
- Enterprise recording procedures
- System/Network types and characteristics
- Contingency plans
- Problem solving
- Supervisory, alarm, protection and control equipment
- Switchgear operation
- Load shedding principles
- Communication principles
- Control and data acquisition systems
- Computers and software
- Switching practices and procedures

Specific skills needed to achieve the Performance Criteria:

- Apply relevant OHS regulations
- Apply relevant statutory legislation
- Apply relevant enterprise/site safety procedures
- Apply enterprise/site emergency procedures

REQUIRED SKILLS AND KNOWLEDGE

and techniques
- Apply enterprise recording procedures
- Control system/network
- Identify plant status
- Communicate effectively
- Identify and respond to abnormal system operating conditions
- Plan and prioritise work
- Coordinate the operation of system/network to maintain plant integrity,
- Continuity of supply and optimum efficiency
- Use diagrams, drawings and symbols
- Direct and coordinate personnel
- Select appropriate load shedding.

Evidence Guide

EVIDENCE GUIDE

8) This provides essential advice for assessment of the competency standard unit and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this competency standard unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. In some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and regulatory policy.

Methods chosen for assessment are influenced by various factors, including the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work influence decisions as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points should be considered when choosing an assessment method and developing assessment instruments. Sample assessment

instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines - UEP06". Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
- Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedure

- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - The knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - Relevant system type
  - Preparing for system operations
  - Coordinating a Network/System operation
  - Interpreting and responding to faults and abnormal system operating conditions
  - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of

workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working in limited spaces with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Key competencies **8.6)**

Evidence that particular key competencies have been achieved within this unit is in the context of the following Performance Criteria of evidence. See Volume 2, Part 4 for an explanation of Key competencies and levels of this Training Package.

Key competencies	**Example of Application**	**Performance Level**
How are ideas and information communicated within this competency?	Refer to the following example of application: Explain ideas and actions, make suggestions for alternative actions and deal with contingencies and non-routine situations.	2
How can information be collected, analysed and organised?	Refer to the following example of application: Information with regard to operations, faults and maintenance may be observed and monitored for analysis and organised into records and reports.	2
How are activities planned and organised?	Refer to the following example of application: Planning the required activity, to include co-ordination and use of equipment, materials and tools to avoid backtracking and rework.	2
How is team work used within this competency?	Refer to the following example of application: Coordinate activities of the team and provide appropriate support to other team members in completion of work tasks to meet the team's goals.	2
How are mathematical ideas and techniques used?	Refer to the following example of application: Calculation of time to complete routine projects, operations, tasks, estimation of distances, levels, loads and material requirements.	2

How are problem solving skills applied?	Refer to the following example of application: Determine solutions which focus on long and short-term resolution of work task problems.	2
How is use of technology applied?	Refer to the following example of application: Access, communicate, measure and provide information to monitor operations and performance of plant and equipment.	2

Skills Enabling Employment

8.7)

Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance. See Volume 2, Part 5 for definitions and an explanation of skills enabling employment.

Skills for Employment		**Example of Application**
1	Developing and using skills within a real workplace	Refer to the following example of application: Completion of tasks within an acceptable timeframe and performance with some supervision.
2	Learning to learn in the workplace	Refer to the following example of application: Comprehension and application of theoretical knowledge to well-developed skills.
3	Reflecting on the outcome and process of work task	Refer to the following example of application: Focused on improvement in own and other team member's performance in the workplace.
4	Interacting and understanding of the context of the work task	Refer to the following example of application: Working understanding of the processes and systems which apply to the workplace.

5	Planning and organising the meaningful work task	Refer to the following example of application: Achieving work tasks in a timely manner and ensuring that the work team achieves its stated work goals.
6	Performing the work task in non-routine or contingent situations	Refer to the following example of application: Seek advice and apply solutions to problems relevant to the workplace environment.

Range Statement

RANGE STATEMENT

7) This relates to the competency standard unit as a whole, providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Safety standards may include relevant sections of OHS legislation, enterprise safety rules, relevant State and federal legislation and national standards for plant.

Information and documentation sources may include verbal or written communications; enterprise safety rules documentation; enterprise operating instructions; dedicated computer equipment; enterprise/site standing and operating instructions; enterprise log books; manufacturer operation and maintenance manuals; and equipment and alarm manuals.

Systems may be interconnected, remote or isolated.

Technical and operational indicators may include local indicators and recorders, computers and alarms (visible and or audible).

Key indicators may include voltage, current, reactive power flows, load, equipment loading limits, system node points, frequency and plant status.

Communications may be by means of telephone, two way radio, pager, computer (electronic mail) and operating logs (written or verbal).

Appropriate personnel, team members/other authorities may include supervisor/team leader or equivalent, power plant operations personnel or equivalent, technical and engineering officers or equivalent, maintenance staff, other operating staff or equivalent, system controller, field operators, restricted operators, emergency personnel, network controllers/coordinators, generation controllers, plant operators, field operators, support staff, fire service, police, ambulance, emergency services, enterprise and site representatives, consumers and independent power producers.

Equipment may include machines, circuit breakers, tap changers, protection settings, capacitor/condenser banks, generators and SCADA systems.

Voltage control may be synchronous compensator, generation VAR output, capacitor/condenser, switchgear, tap changers and network configuration.

System integrity may be affected by machine and system stability, transmission line and transformer overloading, correct tap changer position, protection settings, voltage transformer selection, synchronising, required load shedding selected, capacitor/condenser bank selection, loss of network and generation components.

System limitations may include location, weather conditions, natural disasters, accidents, temperature and power swings.

RANGE STATEMENT

Contingencies may include responsive spinning reserve, spare/stand-by plant and load shedding.

Types of incidents may include localised blackout, interconnected/isolated power system potential power system threat, accidents, life threatening situations, generation plant and auxiliary plant faults/failure, loss of network and generation components.

Team members/other authorities may include network controllers/coordinators, generation controllers, plant operators, field operators, support staff, fire service, police, ambulance, emergency services, enterprise and site representatives, consumers and independent power producers.

System condition may be voltage profiles, spare plant, generation/transmission capability limits, deviation from generation schedule, variation from normal trends, plant testing, switching programs and responsive spinning reserve.

Unit operations may include spurious faults in automatic systems, automatic systems operating out of range, failure of automatic system components and routine plant movement.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Volume 2, Part 1.

Unit Sector(s)

Not Applicable

Literacy and numeracy skills

Literacy and numeracy skills **2.2**)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 Literacy and Numeracy

Reading 4 Writing 4 Numeracy 4

Competency Field

Competency Field **4)**

Operations