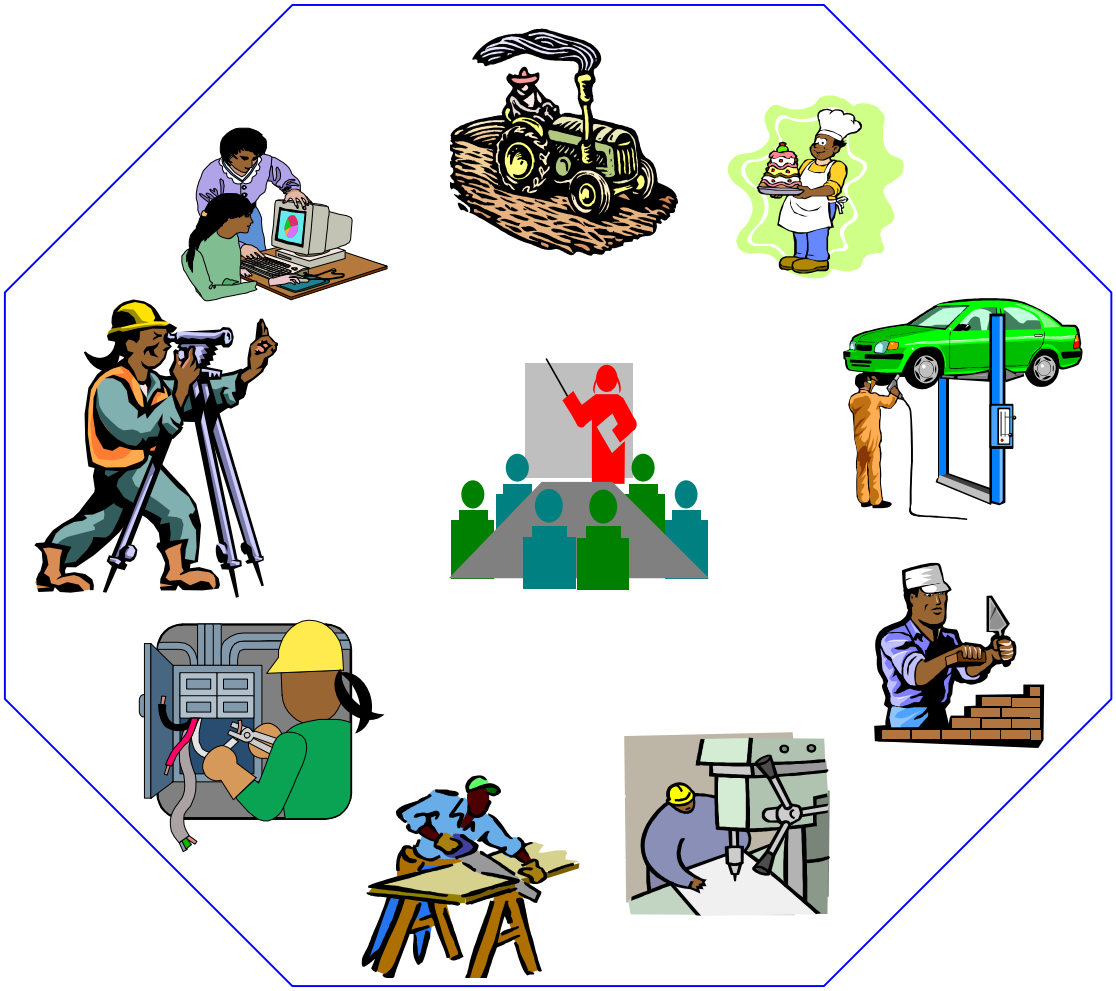
Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

POWER SUBSTATION OPERATION

NTQF Level III



Ministry of Education
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Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopia Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopia Occupational Standard which comprised of Units of Competence.

A Unit of Competence describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title and NTQF level
- Unit title
- Unit code
- Unit descriptor
- Elements and Performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit of Competence guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit of Competence:

- chart with an overview of all Units of Competence for the respective level (Unit of Competence Chart) including the Unit Codes and the Unit Titles
- contents of each Unit of Competence (competence standard)
- occupational map providing the technical and vocational education and training (TVET) providers with information and important requirements to consider when designing training programs for this standards and for the individual, a career path

UNIT OF COMPETENCE CHART

Occupational Standard: Power Substation Operation

Occupational Code: EIS SOP

NTQF Level III

EIS SOP3 01 0612 Apply Quality Systems to Work	EIS SOP3 02 0612 Operate and Monitor Communications Systems	EIS SOP3 03 0612 Conduct Single Energy Source Isolation Procedures for Permit to Work
EIS SOP3 04 0612 Operate and Monitor Fixed Fire Protection Systems	EIS SOP3 05 0612 Interpret and Analyze Single Operation Protection Devices	EIS SOP3 06 0612 Operate and Monitor Supervisory, Control and Data Acquisition Systems
EIS SOP3 07 0612 Conduct First Response within Workplace Team	EIS SOP3 08 0612 Operate Explosive Powered Tools	EIS SOP3 09 0612 Setup and Configure Basic Local Area Networking
EIS SOP3 10 0612 Administer User Networks	EIS SOP3 11 0612 Operate HV Secondary Switchgear	EIS SOP3 12 0612 Perform Substation Switching Operation to a Given Schedule
EIS SOP3 13 0612 Conduct Non-Routine Operational Testing	EIS SOP3 14 0612 Monitor Implementation of Under Frequency Load Shedding	EIS SOP3 15 0612 Operate HV Condition Changing Apparatus
EIS SOP3 16 0612 Coordinate HV Distribution and Sub Transmission Networks	EIS SOP3 17 0612 Operate HV Primary Switchgear	EIS SOP3 18 0612 Operate and Monitor System Equipment (SCADA)
EIS SOP3 19 0612 Implement and Monitor Environmental and Sustainable Energy Management Policies and Procedures	EIS SOP3 20 0612 Respond to Technical Enquiries and Requests	EIS SOP3 21 0612 Liaise with Stakeholders
EIS SOP3 22 0612 Apply Quality Control	EIS SOP3 23 0612 Monitor Implementation of Work Plan/Activities	EIS SOP3 24 0612 Lead Workplace Communication
EIS SOP3 25 0612 Lead Small Teams	EIS SOP3 26 0612 Improve Business Practice	EIS SOP3 27 1012 Maintain Quality System and Continuous Improvement Processes

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Apply Quality Systems to Work**
Unit Code	**EIS SOP3 01 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to apply the desired standards to work as specified within the quality system.

Elements	Performance Criteria
1. Plan and prepare for quality systems	1.1 Appropriate quality systems/procedures are identified from enterprise and/or site quality systems requirements 1.2 Performance objectives are identified and agreed with the team leader in accordance with work plan 1.3 Work plan is structured to ensure quality standards are achieved in accordance with site requirements 1.4 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. Apply quality systems and practices	2.1 ***Quality assurance systems and practices*** are implemented by the individual in accordance with manufacturer's/site requirements 2.2 ***Work*** is monitored against agreed standards, sustainable energy principles and clarified with appropriate personnel in accordance with site requirements 2.3 Allocated jobs or tasks are completed in accordance with team/enterprise quality requirements
3. Initiate changes to quality systems	3.1 Improvements and changes to quality procedures are identified by analysis of systems outcomes in accordance with site requirements 3.2 Extent and nature of proposed changes to quality procedures are identified following investigation of enterprise/technical requirements in accordance with site requirements 3.3 Proposed changes are negotiated and agreed with appropriate parties in accordance with site requirements

Variable	Range
Quality assurance systems and procedures include:	• sustainable energy principles and includes those factors defined in the glossary under "environment"
Work may be	• Occupational Health and Safety standards, codes of

affected by:	practice, manufacturer's specifications, environmental requirements and enterprise procedures

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • Implement occupational health and safety workplace procedures and practices including the use of risk control measures • Apply sustainable energy principles and practices • Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures • Ethiopian and/or international standards related to quality systems • The application of quality systems • Identifying procedural change requirements
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Ethiopian and/or International standards related to quality • Quality management theory • Divisional and team quality systems and procedures including: responsibilities and prerogatives • documentation system including quality manual and quality plan, quality records processes, performance and achievement audits • Elementary quality systems design processes • Communication procedures • principles of sustainable energy practice
Underpinning Skills	Demonstrates skills to: • Access, interpret and apply enterprise quality systems procedures and practices • Read manuals • Apply Occupational Health and Safety • Monitor outcomes • Compile documentation • Keep records • Suggest alternative/improvements to existing systems and procedures • Communicate effectively • Apply data analysis techniques and tools
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Operate and Monitor Communications System**
Unit Code	**EIS SOP3 02 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to operate and monitor the application of communications systems.

Elements	**Performance Criteria**
1. Select and use equipment	1.1 The appropriate ***medium for communication*** is determined from analysis of available options, previous communication or current circumstances and used in accordance with enterprise guidelines, manufacturer's and/or site requirements 1.2 ***Communication procedures*** for opening, passing and receiving messages are conducted to enterprise/site requirements 1.3 Communication equipment is used in accordance with manufacturer's and enterprise/site procedures 1.4 ***Limitations*** of communication links are identified and alternatives considered 1.5 Communication is conveyed logically, concisely and articulately in a manner appropriate to the situation to satisfy job requirements 1.6 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. Monitor communication system	2.1 Data acquisition is monitored and assessed for quality and action taken in accordance with enterprise/site procedures 2.2 Effectiveness of communication, including understanding of the intent and content, is confirmed between the parties in accordance with site requirements 2.3 The need for communication assistance is identified and addressed in accordance with job requirements
3. Complete documentation	3.1 ***Documentation*** is updated, logs maintained and equipment problems, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Variable	Range
Medium for communications may include:	• facsimile • telephone • radio • other electronic medium • memo • letter • report form • log book • switchboard • e-mail • pager • intercom • CB, poster • personal contact • signal and • body language
Communication procedures may include:	• protocol • appropriate forms/log books • telephone answering procedure and • radio procedure
Limitations may be:	• radio/mobile phone dead spots • weather conditions • customer language barriers • customers lack of technical knowledge and incoherent or irate callers
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's operation and maintenance manuals and • equipment and alarm manuals

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate able to: • Implement occupational health and safety workplace procedures and practices including the use of risk control measures • Apply sustainable energy principles and practices • Demonstrate performance across a representative range of contexts from the prescribed items below: – knowledge and application of relevant sections of: occupational, health and safety legislation

	– statutory legislation; enterprise/site safety procedures; enterprise/site emergency procedures • Acknowledging and prioritising fault communication • Selecting and applying communication systems • Monitoring communication systems
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant occupational health and safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures • Enterprise/site emergency procedures and techniques; • Plant status • Relevant plant and equipment, it's locations and operating parameters • Enterprise recording procedures • Policies • Alternative communication links • Communication systems and principles • Computers and software
Underpinning Skills	Demonstrates skills to: • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques • Apply enterprise recording procedures • Communicate information or instructions in a clear and concise manner • Plan and prioritize work • Co-ordinate the operation of equipment to maintain plant integrity • personnel safety and continuity of supply • Apply alternative communication links • Communicate effectively • Apply data analysis techniques and tools • Operate and monitor communication systems
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. In addition to the resources listed above in Context of assessment', evidence should show competence working in confined spaces, with different types of plant and equipment as well as different structural/construction types and method and in a variety of environments.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Conduct Single Energy Source Isolation Procedures for Permit to Work**
Unit Code	**EIS SOP3 03 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to apply single energy source isolation procedures of the permit to work procedures at the isolating level.

Elements	Performance Criteria
1. Plan and prepare for isolation, de-isolation and restoration	1.1 Work requirements are identified from request/work orders or equivalent and clarified/confirmed with the appropriate parties or by site inspection 1.2 Safety issues are identified to comply with statutory, enterprise and site requirements 1.3 Materials, equipment and resources required to satisfy the job plan are identified, requisitioned, obtained and inspected for compliance with job specifications 1.4 Work is planned in detail with the responsible issuing officer, including sequencing and prioritizing of work, and the maintenance of plant security and capacity in accordance with permit/site requirements 1.5 Job requirements including permits are co-ordinate with other personnel involved in, or affected by, the isolation in accordance with enterprise/site requirements 1.6 Where appropriate the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
2. Perform isolation	2.1 Plant to be isolated is correctly identified 2.2 Isolation is performed in accordance with enterprise/site ***permit*** to work procedures 2.3 Isolations are confirmed with others involved in, or affected by, the work in accordance with enterprise/site procedures
3. Perform de-isolation and restoration	3.1 De-isolation and restoration of plant is performed in accordance with permit to work procedures 3.2 De-isolations are confirmed with ***other personnel involved*** in, or affected by, the work in accordance with enterprise/site procedures 3.3 ***Work completion details*** are finalised in accordance with enterprise/site procedures

Variable	Range
Other personnel involved may include:	• issuing officer, • isolating officers, • recipient in charge and • testing officer or their equivalent
Permits may include:	• any documentation/forms approved for use by the enterprise safety rules and • permit to work procedures
Work completion details may include:	• log books, • computer input

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • Implement OHS workplace procedures and practices including the use of risk control measures • Apply sustainable energy principles and practices
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant occupational health and safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures • Enterprise/site emergency procedures and techniques • Environmental legislation • Plant status • Relevant plant and equipment its location and operating parameters; • Enterprise recording procedures • Isolating procedures • Communication principles and procedures • Computers and software • Introduction to power production plant • Typical arrangement of power production plant • Thermodynamics • Properties of matter • Power plant cycle • General responsibilities for power production • plant operations • Electrical principles • Transformers and Switchgear • Electrical protection • Schematic diagrams • Auxiliary supply systems • High voltage systems • High voltage switching procedures • Safe operating principles

Underpinning Skills	Demonstrates skills to: • Apply relevant Occupational Health and Safety regulations • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques • Apply enterprise recording procedures • Locate and/or identify relevant plant and equipment • Operate plant within design parameters • Identify plant status • Prepare plant/equipment for operation • Communicate effectively • Apply isolating procedures • Plan and prioritize work • Use drawings, diagrams and symbols • Apply data analysis techniques and tools
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Operate and Monitor Fixed Fire Protection Systems**
Unit Code	**EIS SOP3 04 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to operate, inspect and monitor fixed fire protection systems.

Elements	Performance Criteria
1. Plan and prepare work	1.1 ***Safety*** issues are identified to comply with enterprise/site requirements 1.2 Work requirements are identified from relevant personnel and documentation 1.3 ***Documentation*** to determine plant status is assessed and evaluated 1.4 Localized plant inspection and field preparations for service are carried out in accordance with manufacturer and enterprise procedures 1.5 Plant operational prerequisites are established in accordance with manufacturer and enterprise procedures 1.6 Sequence for re-commissioning of plant is determined to suit existing circumstances in accordance with enterprise requirements 1.7 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. Operate plant	2.1 Plant is operated in accordance with enterprise and manufacturer operating procedures 2.2 Plant is monitored and observed to detect deviations from normal operating conditions 2.3 Corrective actions are taken to rectify abnormalities in accordance with manufacturer and enterprise procedures
3. Test plant operation	3.1 ***Tests*** are performed in accordance with defined procedures applicable to the operational test 3.2 Plant is observed for correct operational response in accordance with enterprise / manufactures requirements 3.3 Correct action is taken in accordance with enterprise procedures 3.4 Plant is returned to required operational status upon completion of test
4. Analyze system faults	4.1 Causes of ***abnormal plant operating conditions*** are identified by analysing ***the technical and operational*** information in a logical and sequential manner

	4.2 Corrective action taken is in accordance with enterprise procedures 4.3 Plant integrity and personnel safety are maintained through consultation with appropriate personnel, and with reference to plant, technical and operational documentation
5. Monitor and inspect plant	5.1 Plant to be monitored/inspected is physically identified 5.2 Plant is monitored/inspected for normal operation or to detect deviations 5.3 Corrective action taken is in accordance with enterprise procedures 5.4 ***Appropriate personnel*** are notified when defects are detected
6. Complete documentation	6.1 Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Variable	**Range**
Safety standards may include:	• relevant sections of Occupational Health and Safety legislation enterprise safety rules, • relevant state and federal legislation, • national standards for plant and • environmental legislation
Information and documentation sources may include:	• verbal and written communications, • enterprise/site safety rules documentation/form(s), • equipment and alarm manuals, • dedicated computer equipment, • enterprise/site standing and operating instructions, • enterprise/site log book and manufacturer operation and • maintenance manuals
Tests may include:	• stand-by plant tests, • post maintenance operating tests and • alarm tests
Test, fault finding and operating tools may include:	• hand and power tools and • CO2 equipment
Faults and abnormal operating conditions may include:	• motor/pump/ actuator/valve/damper failure/malfunction, • control equipment failure/ malfunctions, • loss of electrical supply to plant and equipment, • loss/ low air, • water, • lubricating oil to plant/ equipment, • CO2 system faults/ malfunctions,

	• CO2 leaks, • high filter/ strainer, and • excessive vibration pumps/ motors
Technical and operational indicators may include:	• stimuli (audio, smell, touch, visual), • local indicators and recorders, • computers and • alarms (visible and or audible)
Appropriate personnel to consult, give or receive direction may include:	• supervisor/team leader or equivalent, • power system control personnel or equivalent, • contractor and specialist personnel, • maintenance staff and • power plant operations personnel

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • Implement OHS 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 • Preparation and planning of work • Operation of fixed fire protection systems • Operationally testing plant • Analyzing plant faults • Monitoring plant operation
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant Occupational Health and Safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures • Enterprise/site emergency procedures and techniques • Relevant plant and equipment, its location and • operating parameters • Plant status • Environmental legislation • Enterprise recording procedures • Communication principles • Control and data acquisition systems • Computers and software • Supervisory, alarm, protection and control equipment • Emergency procedures
Underpinning Skills	Demonstrates skills to: • Apply relevant Occupational Health and Safety regulations • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques

	• Apply enterprise recording procedures • Identify plant status • Prepare plant/equipment for operation • Organize resources • Operate fixed fire protection systems • Apply diagnostic and testing techniques • Identify and respond to abnormal plant operating conditions • Plan and prioritize work • Use relevant hand tools • Communicate effectively • Apply data analysis techniques and tools • Operate in a team • Use diagrams, drawings and symbols • Co-ordinate the operation of equipment to maintain plant integrity • Personnel safety and continuity of supply
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Interpret and Analyze Single Operation Protection Devices**
Unit Code	**EIS SOP3 05 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to interpret and analyze of the operation of single operation protection devices.

Elements	Performance Criteria
1. Respond to protection operation	1.1 ***Protection*** operation is confirmed in accordance with enterprise procedures 1.2 Apparatus affected is identified in accordance with enterprise procedures 1.3 Targets, flags and alarms are identified and recorded in accordance with enterprise/site procedure 1.4 Relevant stake holders are advised in accordance with enterprise procedures 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. Interpret and determine cause of protection operation	2.1 External information is managed and ***communication*** with external stakeholders is conducted and recorded in accordance with enterprise procedures 2.2 ***Information*** is collated and assessed in a logical and sequential manner in accordance with enterprise procedures 2.3 Sequence of events prior to and following protection operation is identified and assessed in accordance with enterprise procedures 2.4 Protection operations are assessed and evaluated in accordance with enterprise procedures 2.5 Findings are analysed in conjunction with protection type and recorded data, to determine most probable cause of protection operation
3. Restore protection	3.1 All relevant stake holders are informed of findings and plan of action in accordance with enterprise procedures 3.2 Relevant protection indicators are reset in accordance with enterprise procedures 3.3 Corrective action is taken according to fault type in accordance with enterprise/site procedures
4. Complete documentation	4.1 Records are maintained and all events and ***operations*** are logged in accordance with enterprise procedures

Variable	Range
Protection may include:	• over current • over voltage/overload • bucholz • winding temperatures • related L.V. protection
Communications may be by means of	• telephone • two way radio • pager • computer (electronic mail) • operating logs (written or verbal)
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 • equipment and alarm manuals
Technical and operational indicators may include:	• stimuli (audio, smell, touch, visual) • local indicators and recorders • computers • alarms (visible and or audible)
Operating environment may be:	• remote from plant and equipment being operated, (operation is assisted by remote indicators of plant status and other parameters monitored), • during inclement or otherwise harsh weather conditions, • in wet/noisy/dusty areas or during night periods

Evidence Guide	
Critical aspects of Competence	Assessment requires evidence that the candidate: • 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 • Responding to protection equipment operation • Interpreting and determining cause of equipment operation • Restoring protection • Knowledge of protection equipment and schemes
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant occupational health and safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures

	• Enterprise/site emergency procedures and techniques • Plant status • Plant operating parameters • Relevant plant and equipment, it’ s location and operating parameters • Enterprise recording procedures • Responding to protection equipment operation • Interpreting and determining cause of equipment operation • Restoring protection • Knowledge of protection equipment and schemes
Underpinning Skills	Demonstrates skills to: • Apply relevant occupational health and safety regulations • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques • Apply enterprise recording procedures • Identify plant status • Communicate effectively • Apply data analysis techniques and tools • Apply diagnostic techniques • Apply or determine appropriate corrective actions required • Plan and prioritize work • Use plans, drawings and symbols • Recognize abnormal plant/system/equipment • operating conditions • Evaluate protection operation and determine the • appropriate response
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Operate and Monitor Supervisory, Control and Data Acquisition Systems**
Unit Code	**EIS SOP3 06 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to undertake monitoring and operation of screen based Supervisory, control and data acquisition systems.

Elements	Performance Criteria
1. Operate screen displays	1.1 ***Safety*** issues are identified in accordance with enterprise/system requirements 1.2 System requirements are identified from relevant personnel and ***documentation*** 1.3 Screen displays and applications are identified and retrieved in accordance with system requirements 1.4 Functions available from the screen based equipment are identified and selected in accordance with system procedures 1.5 Functions available from the screen based equipment are utilized in accordance with system requirements 1.6 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. Monitor and interpret information	2.1 Screen ***displays*** are monitored in accordance with enterprise/system procedures 2.2 ***Abnormal*** values are identified by analysis of information obtained from screen displays in accordance with enterprise/system procedures 2.3 Corrective action taken is in accordance with enterprise/system procedures 2.4 Alarms are acknowledged, prioritised and responded to in accordance with enterprise/system procedures
3. Enhance screen display	3.1 Requirements for the development of new screen displays are identified and confirmed in accordance with system requirements 3.2 New screen displays are researched, assessed and confirmed with ***appropriate personnel*** in accordance with system requirements

Variable	Range
Safety standards may include:	• relevant sections of Occupational Health and Safety 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 • equipment and alarm manuals
Displays and functions may include:	• trends • alarms • generation plant • fuel supplies • remote plant and equipment • substations • power distribution network • transmission network • stakeholder systems • multiple screens • multiple windows • linkage between screens • trending facilities • index searches • formats • colors • tags • key commands • dedicated keys
Faults and abnormal operating conditions may include:	• hardware and software faults and • System failures
Appropriate personnel to consult, give or receive direction 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/network controller • field operator • restricted HV operators

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • Implement OHS 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 • The full range of displays and applications available are explained • Operation of screed based equipment
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant occupational health and safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures • Enterprise/site emergency procedures and techniques • Relevant plant and equipment, it’ s location and operating parameters • Equipment status • Enterprise recording procedures • Communication principles • Control and data acquisition systems • Computers and software • Supervisory, alarm, protection and control equipment
Underpinning Skills	Demonstrates skills to: • Apply relevant occupational health and safety regulations • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques • Apply enterprise recording procedures • Operate screen based equipment • Identify equipment status • Plan and priorities work • Communicate effectively • Apply data analysis techniques and tools • Identify and respond to abnormal equipment operating conditions • Use diagrams, drawings and symbols
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Conduct First Response within a Workplace Team**
Unit Code	**EIS SOP3 07 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to conduct a first response within emergency team operations.

Elements	Performance Criteria
1. Identify emergency team roles and responsibilities	1.1 The purpose of the team is identified and, where necessary, clarified with relevant personnel 1.2 The duties and responsibilities of team members are identified 1.3 Instructions from supervising team members are carried out in accordance with enterprise/site procedures 1.4 Team members are supported in relation to duties and responsibilities 1.5 Appropriate team member identification is displayed in accordance with procedures
2. Cooperate with other emergency service(s) personnel	2.1 The roles and responsibilities of emergency service(s) personnel are clarified, where necessary 2.2 Role and authority of ***emergency services*** is conveyed to other team members 2.3 Instructions from relevant emergency services personnel are clarified and complied with
3. Evaluate the emergency	3.1 The emergency situation is identified and classified and appropriate action determined 3.2 Advice is accessed from relevant personnel in evaluating the emergency 3.3 Advice is accessed from relevant personnel in evaluating the emergency 3.4 Emergency evacuation procedures are followed where appropriate 3.5 Requirement for ***special expert assistance*** is identified 3.6 ***Incident*** is evaluated to prevent repetition of risk 3.7 Location of emergency is identified and most effective route to emergency is determined 3.8 Situations where first attack actions are not safe are reported according to enterprise/site procedures
4. Contain emergencies	4.1 Emergencies are contained to their area of origin were possible, in accordance with procedures

	4.2 Emergency control equipment or facilities used to confine emergency are used in a safe manner, and with regard to other team members and ***personnel***
	4.3 Emergency control equipment or facilities are used within limitations and relevant operating procedures
	4.4 Manufacturer's specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedures
	4.5 The anticipated behavior and characteristics of the fire or emergency incident are taken into account in the directions and advice given to team members after appropriate site inspection
	4.6 A plan to ensure personnel ***safety*** and plant integrity is developed, in accordance with statutory, industry and site standards
	4.7 Relevant ***documentation*** is obtained in accordance with procedures
	4.8 Materials, equipment and resources required to satisfy the job are identified and obtained
	4.9 Effective lines of ***communication*** are established if required
5. Use emergency equipment	5.1 Appropriate equipment is selected to attack emergency situation
	5.2 Equipment is checked in accordance with procedures or standards to ensure it is safe and ready for use
	5.3 Equipment is used in accordance with relevant procedures and standards
	5.4 Operation and location of others in the team are monitored to ensure the continuing communication, visual contact and safety in accordance with enterprise/site procedures
	5.5 Use of equipment is co-ordinate in conjunction with other emergency actions/responses
	5.6 Rescue and first aid procedures are applied as required and in accordance with procedures
6. Report outcomes of emergency response	6.1 Fire and emergency equipment is marked or positioned after use, in accordance with procedures, to indicate it requires servicing or replacing
	6.2 The use of emergency equipment is reported according to procedures
	6.3 De-briefing is attended and responded to in accordance with procedures

	6.4 Effectiveness of emergency response is evaluated and recommendations are submitted for consideration

Variable	Range
External emergency groups	May include: • police • fire fighting agencies • ambulance • state emergency service • supply authorities (such as water utility)
Special assistance	May be on: • site personnel (e.g. chemists, fire team) • rescue team • environmental officer • safety officer • radiation officer • floor warden or equivalent • chief • warden or equivalent • security staff
Incidents	May include: • fire • rescue • hazardous substances • explosions • bomb alerts • terrorists • radiation • natural disasters • environmental • electrical storms/incidents • accidents • electrical • equipment • structural • security related or wildlife related incidents
Personnel refers to all personnel and	May include: • supervisory • maintenance • operational • contractors and administrative personnel, • visitors and shift operatives
Safety standards	May include: • relevant sections of OHS legislation, enterprise safety rules and national standards for plant

Information and documentation sources	May include: • verbal and written communications • enterprise/site operating instructions • manufacturer's operating and maintenance manuals • dedicated computer equipment • enterprise/site log books • critiques - meetings, discussion, demonstrations and explanations • feedback - comments on suitability of procedures and effectiveness of control equipment • materials safety data sheets • drawings and maps
Communications	May be by means of: • verbal • telephone system • two-way radio • pager • emergency public address system • radio • facsimile • computer (electronic mail) • enterprise/site log book

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • 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 • Ability to communicate effectively with the appropriate personnel and agencies during an emergency • Knowledge and ability to apply first aid and resuscitation techniques • Knowledge of potential hazards during initial response • Knowledge and application of firefighting and rescue principles and techniques • Ability to respond to an emergency situation • Ability to use emergency equipment
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant Occupational Health and Safety regulations • Relevant statutory legislation • Relevant enterprise/site safety procedures • Enterprise/site emergency procedures and techniques • Plant status • Relevant plant and equipment, its location and operating

	parameters • Site communications systems • First aid • Appropriate warning signs • Equipment appropriate for the task • Operation of emergency stations • Roles of the emergency team and its members • Classifications of fires and emergencies • Roles and responsibilities of emergency services • Firefighting and rescue principles and techniques • Communication principles • Human resources and management principles within a team • Material safety data sheets and emergency service
Underpinning Skills	Demonstrates skills to: • Apply relevant Occupational Health and Safety regulations • Apply relevant statutory legislation • Apply relevant enterprise/site safety procedures • Apply enterprise/site emergency procedures and techniques • Locate relevant plant and equipment • Prepare emergency plant/equipment for operation • Communicate effectively • Plan and prioritize work • Work in a team • Apply first aid and resuscitation techniques • Apply emergency and evacuation procedures • Identify and operate appropriate emergency communications equipment • Apply emergency techniques and procedures.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Operate Explosive Powered Tools**
Unit Code	**EIS SOP3 08 0612**
Unit Descriptor	This unit of competence specifies the outcomes required to apply safe and effective operation of explosive power tools (EPT), used to fasten materials or fix fasteners to bases. It includes both direct action and indirect action explosive powered fastening tools.

Elements	Performance Criteria
1. Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details, are obtained, confirmed and applied from relevant ***information*** for ***planning and preparation***. 1.2 ***Safety (OHS) requirements*** are followed in accordance with safety plans and policies. 1.3 Signage and barricade requirements are identified and implemented. 1.4 Plant, ***tools and equipment*** selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement. 1.5 ***Material*** quantity requirements are calculated in accordance with plans and specifications. 1.6 Materials appropriate to work application are identified, obtained, prepared, safely handled and located ready for use. 1.7 ***Environmental requirements*** are identified for the project in accordance with environmental plans and ***statutory and regulatory authority*** obligations, and are applied.
2. Set out fasteners	4.1 ***Minimum distances for set out*** from edge of substrate material are adhered to in accordance with legislation, regulations and codes of practice. 4.2 Material is located and temporarily held or fixed into designed position according to detailed drawings.
3. Use EPT	3.1 ***EPT*** is checked for operation according to manufacturer specifications and safety (OHS) requirements for use of EPT. 3.2 ***Fastener*** is selected according to requirements of job. 3.3 Charge is selected to assess requirements for material,

	base and penetration. 3.4 ***Attachments*** and accessories are installed to EPT in accordance with manufacturer specifications and safety (OHS) requirements. 3.5 Fastener and charge in EPT are located to manufacturer specifications. 3.6 EPT operation is carried out and fastener is fixed into place in accordance with manufacturer recommendations, legislation, regulations and codes of practice. 3.7 Fastening penetration is checked and appropriate depth into material is applied. 3.8 Power regulating device is adjusted for conditions. 3.9 Misfire procedures are carried out according to manufacturer recommendations, legislation, regulations and codes of practice. 3.10 Temporary holding and fixings are removed without damage to material.
4. Secure and store equipment and charges	4.1 Charges are stored in designated container in accordance with legislation, regulations and codes of practice and used charges are recorded. 4.2 Unused fasteners, the EPT and attachments are stored in a carry case in line with manufacturer recommendations. 4.3 Logbook is checked and maintenance recorded according to manufacturer recommendations.
5. Maintain EPT and kit	5.1 Safety features of tools are checked for serviceability in accordance with manufacturer operating manual. 5.2 Tools are cleaned and lubricated to manufacturer recommendations. 5.3 Periodic maintenance service is carried out to manufacturer specifications. 5.4 Diminished stocks of charges and fasteners are replenished to designed effectiveness of EPT kit.
6. Clean up	6.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, and codes of practice and job specification. 6.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.

Variable	Range
Information include:	• diagrams or sketches • instructions issued by authorized • organizational or external personnel • manufacturer specifications and instructions where specified • memos • MSDS • organization work specifications and requirements • plans and specifications • regulatory and legislative requirements • pertaining to using EPT • relevant local standards • safe work procedures related to using EPT • signage • verbal or written and graphical instructions • work bulletins • work schedules
Planning and preparation include:	• work site inspection • equipment defect identification • assessment of conditions and hazards • determination of work requirements

Safety (OHS) is to be in accordance with legislation, regulations, codes of practice, organizational safety policies and procedures, and project safety plan and may include:	• emergency procedures, including extinguishing fires, organizational first aid requirements and evacuation
	• handling of materials
	• hazard control
	• hazardous materials and substances
	• safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
	  • earth leakage boxes
	  • lighting
	  • power cables, including overhead service trays, cables and conduits
	  • restricted access barriers
	  • surrounding structures
	  • traffic control
	  • trip hazards
	  • work site visitors and the public
	  • working at heights
	  • working in confined spaces
	  • working in proximity to others
	  • working with dangerous materials
	• organizational first aid
	• personal protective clothing and equipment prescribed under legislation, regulations workplace policies and

	practices • use of firefighting equipment • use of tools and equipment • workplace environment and safety
Tools and equipment include:	• direct action EPT • indirect action EPT • clamps and • levels
Materials include:	• timber • metals • patented fasteners
Environmental requirements include:	• clean-up management • noise and dust • vibration • waste management
Statutory and regulatory authorities include:	• federal, state and local authorities • administering applicable Acts, • regulations and codes of practice
Minimum distance for set out of fasteners is to be in accordance with:	• regulated minimum distances • bases, including concrete, masonry or steel
Use of EPT include:	• stripping and assembling tools • completing log of serviceability • maintaining and cleaning tools • selecting charges and fasteners applicable to • the base material and material being fixed • misfire procedures • using attachments • complying with storage and security • regulations and OHS requirements for the • working environment • selecting signage • test fire
Attachments include:	• channel, rebate and other manufacturer attachments
Fastener and charge include:	• firing a test shot with misfire procedures, complying with the regulated safety procedure for misfire

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate: • Location, interpretation and application of relevant information, standards and specifications • Compliance with site safety plan and OH&S

	legislation/regulations/codes of practice applicable to workplace operations • Compliance with organizational policies and procedures including quality requirements • Safe and effective operational use of tools and equipment • Communication and working effectively and safely with others • The fixing of metal or timber to a steel, concrete or masonry base on one project of each to job specifications including completion of all activities listed in the fourth dot point of the Unit Scope
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • construction terminology • EPT materials • EPT charges and fasteners • equipment safety manuals and instructions • job safety analysis (JSA) and safe work method statements • material safety data sheets (MSDS) • materials storage and environmentally friendly waste management • plans, specifications and drawings • processes for the calculation of material requirements • quality requirements • relevant Acts, regulations and codes of practice • security and storage procedures for equipment and charges • types, characteristics, uses and limitations of plant, tools and equipment • workplace and equipment safety requirements

Underpinning Skills	Demonstrates skills to:
	• communication skills to:
	  • Determine requirements
	  • enable clear and direct communication, using questioning to identify and
	  • confirm requirements, share information, listen and understand
	  • follow instructions
	  • read and interpret:
	  • documentation from a variety of sources
	  • drawings and specifications
	  • report faults
	  • use language and concepts appropriate to cultural differences
	  • use and interpret non-verbal communication, such as hand signals
	  • written skills to record maintenance in logbook

	• identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
	• numeracy skills to apply measurements and make calculations
	• organizational skills, including the ability to plan and set out work
	• teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
	• technological skills to:
	  • use a range of mobile technology, such as two-way radio and mobile phones
	  • voice and hand signals to access and understand site-specific instructions

Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Set up and Configure Basic Local Area Network**
Unit Code	**EIS SOP3 09 0612**
Unit Descriptor	This unit covers setting up, configuring and maintaining operation of a basic local area network (LAN) of up to 20 connected devices. It encompasses safe working practices, installing network hardware, installing and configuring network software, establish user accounts, configure shared Internet connection and documenting set up parameters and LAN topology.

Elements	Performance Criteria
1. Prepare to set up and configure basic local area network	1.1 OHS processes and procedures for a given work area are identified, obtained and understood. 1.2 The extent of set-up and configuration work is determined from job specifications and in consultation with appropriate person(s). 1.3 Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved on the work site. 1.4 Hardware and software needed for the work is obtained in accordance with established procedures and checked against job requirements. 1.5 Preparatory work is checked to ensure no damage has occurred and complies with requirements.
2. Set up, configure and maintain basic local area network	2.1 OHS risk control measures and procedures for carrying out the work are followed. 2.2 Layout of network hardware, cabling and outlets is determined from job specifications or in consultation with appropriate person(s). 2.3 Hardware is installed in accordance with network requirements. 2.4 Network software is in installed and configured in accordance with network requirements. 2.5 Network operations are tested and anomalies identified and corrected. 2.6 Reported network failures and faults are responded to and appropriate tools and methods are used to 2.7 Identified causes of reported problems are rectified and network is tested in accordance with established procedures. Unexpected situations are dealt with safely

	and with the approval of an authorized person. 2.8 Set-up configuration and maintenance are carried out efficiently without waste of materials or damage to apparatus and the surrounding environment or services and using sustainable energy practices.
3. Complete work and document activities	3.1 OHS risk control work completion measures and procedures are followed. 3.2 Work site is cleaned and made safe in accordance with established procedures. 3.3 Network configuration and maintenance records are maintained in accordance with established procedures. 3.4 Service report is completed and forwarded to appropriate person(s) in accordance with established procedures.

Variable	**Range**
This unit shall be demonstrated in relation to setting up and configuring basic local area network that include at least:	• 3 personal computers/work stations • 1 server • 1 hub or switch or router • 1 input or output device

Evidence Guide	

Critical Aspects of Competence	Assessment requires evidence that the candidate:
	• Implement OHS 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
	• Set up and configure basic local area network including:
	  • Establishing the extent of work accurately.
	  • Obtaining specified hardware and software.
	  • Laying out network appropriately.
	  • Installing hardware as specified.
	  • Installing and configuring software to requirements.
	  • Identifying and correcting anomalies.
	  • Diagnosing and rectifying the cause of malfunctions effectively.
	  • Documenting network activities.
	  • Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions in a holistic manner.

Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Local area network fundamentals • Basic configuration of local area network • Techniques and procedures of diagnosing / rectifying faults or malfunctions
Underpinning Skills	Demonstrates skills to: • apply OHS measures and procedures • prepare to set up and configure basic local area network • set up, configure and maintain basic local area network • complete documentation
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Administer User Networks**
Unit Code	**EIS SOP3 10 0612**
Unit Descriptor	This unit covers the administration of network servers. It encompasses safe working practices, establishing and maintaining user and group permissions, network security and shared resource management, monitoring and optimizing network systems performance and reliability, maintaining currency of the network and documenting all administration activities.

Elements	Performance Criteria
1. Prepare to install, upgrade and maintain network operations	1.1 OHS procedures for a given work area are identified, obtained and understood. 1.2 Established OHS risk control measures and procedures are followed in preparation for the work. 1.3 The nature of the network is established from network specifications and in consultation with appropriate person(s). 1.4 Activities are planned to meet scheduled timelines in consultation with others involved in the work. 1.5 Network operating system versions and updates needed to maintain the network are obtained in accordance with established procedures and checked against job requirements.
2. Install, upgrade and maintain network operations	2.1 OHS risk control measures and procedures for carrying out the work are followed. 2.2 Server operating systems in current use are installed and upgraded and configure in accordance with developer's instructions and network requirements. (See Note 2) 2.3 Devices and drivers, desktop environment, network protocols and services and system security are implemented in accordance with requirements. 2.4 Access to resources is configured within the limitations specified for each user. 2.5 Network malfunctions are identified and rectified using logical techniques and drawing knowledge of devices and drivers, storage, network protocols, connections and services and system security configuration processes. 2.6 Network performance and reliability is monitored and optimized in accordance with established procedures. 2.7 Methods for dealing with unexpected situations are

	selected on the basis of safety and specified work outcomes.
3. Document network administration activities	3.1 Network administration documentation are maintained in accordance with established procedures. 3.2 OHS procedures for a given work area are identified, obtained and understood.

Variable	**Range**
This unit shall be demonstrated in relation to	• administering at least two networks each with a different server operating system in current use

Evidence Guide	

Critical Aspects of Competence	Assessment requires evidence that the candidate:
	• Implement OHS 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
	• Administer user networks including:
	  • Establishing network requirements and operating system versions and updates.
	  • Installing, upgrading and configuring server operating system correctly.
	  • Configuring access to resources for each user.
	  • Identifying network malfunctions.
	  • Rectifying network malfunctions.
	  • Documenting network administration activities.
	  • Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions.

Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Network operating system implementation • Network operating systems essentials • Unix fundamentals
Underpinning Skills	Demonstrates skills to: • Apply OHS measures and practices • Install, upgrade and maintain network operations
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Power Substation Operation Level III	
Unit Title	**Operate HV Secondary Switchgear**
Unit Code	**EIS SOP3 11 0612**
Unit Descriptor	This unit deals with the skills and knowledge required to undertake the local operation of high voltage secondary circuit breaking devices.

Elements	Performance Criteria
1. Prepare to operate secondary switchgear	1.1 Work requirements are identified and clarified/confirmed with ***appropriate parties*** in accordance with enterprise procedures 1.2 Procedures/***safety*** precautions when operating H.V. switch gears are identified and recognized in accordance with enterprise procedures 1.3 Location of switchgear is determined from appropriate drawings, plans and maps 1.4 Identify switch gear type and determine correct operating procedure in accordance with enterprise procedures 1.5 Examine and assess switch gear condition for safe operation in accordance with enterprise procedures 1.6 Suppress related protection if and where necessary in accordance with enterprise procedures 1.7 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. Operate switch gear	2.1 Mechanical operation and limitations of the equipment are identified in accordance with enterprise procedures 2.2 ***Implications*** of actions are identified and recognised in accordance with enterprise procedures 2.3 Switch gear is operated and confirmation that required status has been achieved is given in accordance with enterprise procedures 2.4 Racking, testing, isolation, circuit earthen and reinstatement procedures are carried out to manufacturer's instructions and enterprise/site procedures
3. Validate switch gear integrity	3.1 ***Equipment*** inspected for safe ***operation*** in accordance with enterprise procedures 3.2 Switch gear environment is inspected to ensure all statutory requirements are met 3.3 Confirm switch gear operates in accordance with manufacturer's specifications

4. Complete documentation	4.1 ***Documentation*** is updated, log sheets maintained and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Variable	**Range**
Appropriate personnel for consultation, to give or receive direction 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/network controller • field operator and restricted HV operators
Safety standards may include:	• relevant sections of occupational health and safety legislation • enterprise safety rules • relevant state and federal legislation and national standards for plant
Implications may be	• safety of personnel and public • damage to equipment • loss of plant • legal implications • system integrity • capital cost • lost enterprise revenue and community costs
Equipment may include:	• air insulated single phase/three phase link operated URD switchgear • oil immersed ring main switch (RMU) metal clad • compact switching station • load break elbows and oil immersed rotary switch • ring main switch SF6 metal clad • arc chute air break switch • horn deflecting air break switch • sectionalizes and expulsion drop outs and H.V. links
Technical and operational indicators may include:	• stimuli (audio, smell, touch, visual), • local indicators and recorders, • computers and alarms (visible and or audible)
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's operation and maintenance manuals; and equipment and alarm manuals