TRAINING REGULATIONS

ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II

UTILITIES SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Superhighway, Taguig City, Metro Manila

Technical Education and Skills Development Act of 1994
(Republic Act No. 7796)

Section 22, "Establishment and Administration of the National Trade Skills Standards" of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.

The Training Regulations (TR) serve as basis for the:

1 Development of curriculum and assessment tools;
2 Registration and delivery of training programs; and
3 Establishment of competency assessment and certification arrangements;

Each TR has four sections:

Section 1 Definition of Qualification - refers to the group of competencies that describes the different functions of the qualification.

Section 2 Competency Standards - gives the specifications of competencies required for effective work performance.

Section 3 Training Arrangements - contains information and requirements in designing training program for certain Qualification. It includes curriculum design, training delivery; trainee entry requirements; tools and requirements; tools and equipment; training facilities and trainer's qualification.

Section 4 Assessment and Certification Arrangements - describes the policies governing assessment and certification procedure

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TRAINING REGULATIONS FOR
ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II

Section 1 ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II QUALIFICATION

The **Electric Power Distribution Line Construction NC II** Qualification consists of competencies that a person must possess to erect electric distribution pole, climb pole and install pole assembly and conductors, install single-phase distribution line equipment and devices as well as to install single-phase consumer service connection facility. Line construction involves work on non-energized lines, particularly construction/ extension of new electric power distribution lines.

This Qualification is packaged from the proposed competency map of the Utilities Industry (Service Sector) shown in Annex A.

The units of competency comprising this qualification include the following:

Code	BASIC COMPETENCIES
500311105	Participate in workplace communication
500311106	Work in team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures
500311133	Solve/address general workplace problems
500311134	Exercise sustainable development in the workplace

Code	COMMON COMPETENCIES
UTL311203	Apply quality standards
UTL311206	Comply with environmental protection procedures
UTL311201	Observe procedures, specifications and manuals of instruction
UTL311205	Operate and maintain hand/line tools and equipment
UTL311207	Perform Computer Operations

Code	CORE COMPETENCIES
UTL741312	Erect electric distribution pole
UTL741313	Climb pole and install pole assembly/conductors
UTL741314	Install single–phase distribution line equipment and devices
UTL741315	Install single-phase consumer service connection facility

A person who has achieved this Qualification is competent to be an:

- Electric power distribution line worker
- Construction line worker (off-line)

SECTION 2: COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common, and core units of competency required for **Electric Power Distribution Line Construction NC II.**

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION
UNIT CODE : 500311105
UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from ***appropriate sources*** 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate ***medium*** is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and ***storage*** of information are used 1.7 Personal interaction is carried out clearly and concisely	1.1 Effective communication 1.2 Different modes of communication 1.3 Written communication 1.4 Organizational policies 1.5 Sources of information 1.6 Types of question 1.7 Medium of communication 1.8 Flow of communication 1.9 Storage system 1.10 Telephone courtesy	1.1 Follow simple spoken language 1.2 Performing routine workplace duties following simple written notices 1.3 Ability to relate to people of social range in the workplace 1.4 Gather and provide information in response to workplace requirements 1.5 Listening skills 1.6 Questioning skills 1.7 Workplace language skills
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established ***protocols*** 2.4 ***Workplace interactions*** are conducted in a courteous manner	2.1. Communication procedures and systems 2.2. Meeting protocols 2.3. Nature of workplace meetings 2.4. Barriers of communication 2.5. Workplace interactions 2.6. Non verbal communication	2.1. Ability to relate to people of social range in the workplace 2.2. Interpersonal communication skill 2.3. Observing meeting protocols

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented		
3. Complete relevant work related documents	3.1 Range of ***forms*** relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines	3.1 Technology relevant to the enterprise and the individual's work 3.2 Types of workplace documents and forms 3.3 Basic mathematical concepts 3.4 Kinds of workplace report	3.1 Apply basic mathematical processes of addition, subtraction, division and multiplication 3.2 Data recording 3.3 Report writing

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1. Team members 1.2. Suppliers 1.3. Trade personnel 1.4. Local government 1.5. Industry bodies
2. Medium	2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information discussion 2.5. Follow-up or verbal instructions 2.6. Face to face communication
3. Storage	3.1. Manual filing system 3.2. Computer-based filing system
4. Forms	4.1. Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1. Face to face 5.2. Telephone 5.3. Electronic and two way radio 5.4. Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1. Observing meeting 6.2. Compliance with meeting decisions 6.3. Obeying meeting instructions

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Prepared written communication following standard format of the organization 1.2. Accessed information using communication equipment 1.3. Made use of relevant terms as an aid to transfer information effectively 1.4. Conveyed information effectively adopting the formal or informal communication
2. Resource Implications	2.1. Fax machine 2.2. Telephone 2.3. Writing materials 2.4. Internet
3. Methods of Assessment	3.1. Direct Observation 3.2. Oral interview and written test
4. Context for Assessment	4.1. Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY: WORK IN TEAM ENVIRONMENT

UNIT CODE : 500311106

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Describe team role and scope	1.1. The ***role and objective of the team*** is identified from available ***sources of information*** 1.2. Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources	1.1 Team roles 1.2 Definition of Team 1.3 Difference between team and group 1.4 Different source of information 1.5 Objectives and goals of team	1.1 Describing the team role and scope
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified 2.2. Roles and responsibility of other team members are identified and recognized 2.3. Reporting relationships within team and external to team are identified	2.1. Team structure 2.2. Roles and responsibility of team members 2.3. Teams in work environment 2.4. Fundamental rights at work including gender sensitivity	2.1. Communicate appropriately, consistent with the culture of the workplace 2.2. Identifying individual role and responsibility 2.3. Identifying external relationship
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and ***workplace context*** 3.3. Observed protocols in reporting using standard operating procedures 3.4. Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members	3.1 Communication process 3.2 Group planning and decision making 3.3 Team goals and objectives 3.4 Understanding individual competencies relative to teamwork 3.5 Types of individuals 3.6 Role of leaders	3.1 Interacting effectively with others 3.2 Setting team goals and expectations

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1. Work activities in a team environment with enterprise or specific sector 1.2. Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Operated in a team to complete workplace activity 1.2. Worked effectively with others 1.3. Conveyed information in written or oral form 1.4. Selected and used appropriate workplace language 1.5. Followed designated work plan for the job 1.6. Reported outcomes
2. Resource Implications	The following resources **MUST** be provided: 2.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2. Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency may be assessed through: 3.1. Observation of the individual member in relation to the work activities of the group 3.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 3.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
4. Context for Assessment	4.1. Competency may be assessed in workplace or in a simulated workplace setting 4.2. Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY: PRACTICE CAREER PROFESSIONALISM
UNIT CODE : 500311107
UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Integrate personal objectives with organizational goals	1.1. Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2. Intra- and interpersonal relationships are maintained in the course of managing oneself based on performance ***evaluation*** 1.3. Commitment to the organization and its goal is demonstrated in the performance of duties	1.1. Work values and ethics (Code of Conduct, Code of Ethics, etc.) 1.2. Understanding personal objectives 1.3. Understanding organizational goals 1.4. Difference between intra and interpersonal relationship 1.5. Performance evaluation	1.1. Demonstrate Intra and Interpersonal skills at work 1.2. Demonstrate personal commitment in work
2. Set and meet work priorities	2.1. Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2. ***Resources*** are utilized efficiently and effectively to manage work priorities and commitments 2.3. Practices along economic use and maintenance of equipment and facilities are followed as per established procedures	2.1 Company policies 2.2 Company operations, procedures and standards 2.3 Time management 2.4 Basic strategic planning concepts 2.5 Resource utilization and management	2.1 Managing goals and time 2.2 Practice economic use of resources and facilities 2.3 Setting work priorities 2.4 Practice time management
3. Maintain professional growth and development	3.1. ***Trainings and career opportunities*** are identified and availed of based on job requirements 3.2. ***Recognitions*** are sought/received and demonstrated as proof of career advancement 3.3. ***Licenses and/or certifications*** relevant to job and career are obtained and renewed	3.1 Career development opportunities 3.2 Company recognition and incentives 3.3 Information on relevant licenses and or certifications	3.1 Determining personal career development needs 3.2 Identifying career opportunities

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Attained job targets within key result areas (KRAs) 1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation 1.3 Completed trainings and career opportunities which are based on the requirements of the industries 1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification
2. Resource Implications	The following resources **MUST** be provided: 2.1 Workplace or assessment location 2.2 Case studies/scenarios
3. Methods of Assessment	Competency may be assessed through: 3.1 Portfolio Assessment 3.2 Interview 3.3 Simulation/Role-plays 3.4 Observation 3.5 Third Party Reports 3.6 Exams and Tests
4. Context for Assessment	4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES

UNIT CODE : 500311108

UNIT DESCRIPTOR : This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify hazards and risks	1.1. ***Safety regulations*** and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2. ***Hazards/risks*** in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures 1.3. ***Contingency measures*** during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures	1.1 OHS procedures and practices and regulations 1.2 Hazards/risks identification and control 1.3 OHS indicators 1.4 Organizational contingency practices	1.1 Hazards/risks identification and control skills 1.2 Practice of safety and health procedures and personal hygiene
2. Evaluate hazards and risks	2.1. Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2. Effects of the hazards are determined 2.3. OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation	2.1 Threshold Limit Value (TLV) 2.2 Effects of safety hazards	2.1 Communication skills 2.2 Reporting safety hazards
3. Control hazards and risks	3.1. Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed 3.2. Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies	3.1 Personal hygiene practices 3.2 Organization safety and health protocol 3.3 Company emergency procedure practices	3.1 Practice of personal hygiene 3.2 Respond to emergency

	3.3. ***Personal protective equipment (PPE)*** is correctly used in accordance with organization OHS procedures and practices 3.4. Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol		
4. Maintain OHS awareness	4.1. ***Emergency-related drills and trainings*** are participated in as per established organization guidelines and procedures 4.2. ***OHS personal records*** are completed and updated in accordance with workplace requirements	4.1 Workplace OHS personal records 4.2 Information on emergency-related drills	4.1 Practice emergency-related drill skills in the workplace

RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Electrical hazards – electrically energized equipment and conductors 2.5 Ergonomics 2.5.1 Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles 2.5.2 Physiological factors – monotony, personal relationship, work out cycle
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Explained clearly established workplace safety and hazard control practices and procedures 1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Recognized contingency measures during workplace accidents, fire and other emergencies 1.4 Identified terms of maximum tolerable limits based on threshold limit value (TLV). 1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
2. Resource Implications	The following resources must be provided: 2.1 Workplace or assessment location 2.2 OHS personal records 2.3 PPE 2.4 Health records
3. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
4. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT TITLE : ADDRESS GENERAL WORKPLACE PROBLEMS
UNIT CODE : 500311133
UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to apply problem-solving techniques to determine the origin of a malfunction and plan for its resolution.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify routine problems	1.1. Identify routine problems or procedural problem areas 1.2. Define and determine problem to be investigated 1.3. Identify and document current conditions of the problem	1.1. Current industry hardware and software products and services 1.2. Industry maintenance, service and helpdesk practices, processes and procedures 1.3. Industry standard diagnostic tools 1.4. Malfunctions and resolutions.	1.1. Identifying current industry hardware and software products and services 1.2. Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 1.3. Identifying current industry standard diagnostic tools 1.4. Describing common malfunctions and resolutions. 1.5. Determining the root cause of a routine malfunction
2. Look for solutions to routine problems	2.1. Identify potential solutions to problem 2.2. Develop, document, rank and present recommendations about possible solutions to ***appropriate person*** for decision	2.1. Current industry hardware and software products and services 2.2. Industry service and helpdesk practices, processes and procedures 2.3. Operating systems 2.4. Industry standard diagnostic tools 2.5. Malfunctions and resolutions. 2.6. Root cause analysis	2.1. Identifying current industry hardware and software products and services 2.2. Identifying services and helpdesk practices, processes and procedures. 2.3. Identifying operating system 2.4. Identifying current industry standard diagnostic tools 2.5. Describing common malfunctions and resolutions. 2.6. Determining the root cause of a routine malfunction

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Recommend solutions to problems	3.1. ***Plan*** implementation of solutions 3.2. Plan evaluation of implemented solutions 3.3. ***Document*** recommended solution and submit to appropriate person for confirmation	3.1. Standard procedures 3.2. Documentation procedures 3.3. Recommended solutions	3.1. Producing documentation that recommends solutions to problems 3.2. Following established procedures

RANGE OF VARIABLES

VARIABLES	RANGE
1. Appropriate person	May Include: 1.1 Supervisor or manager 1.2 Peers/work colleagues 1.3 Other members of the organization
2. Document	May include : 2.1 Electronic mail 2.2 Briefing notes 2.3 Written report
3. Plan	May include : 3.1 Priority requirements 3.2 Co-ordination and feedback requirements 3.3 Safety requirements 3.4 Risk assessment 3.5 Environmental requirements

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 determine the root cause of a routine malfunction 1.2 identify solutions 1.3 produce documentation that recommends solutions to problems 1.4 follow established procedures 1.5 refer unresolved problems to support persons.
2. Resource Implications	2.1 Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations.
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Written Test 3.2 Interview The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant
4. Context for Assessment	4.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY : **EXERCISE SUSTAINABLE DEVELOPMENT IN THE WORKPLACE**
UNIT CODE : **500311134**
UNIT DESCRIPTOR : This unit covers knowledge, skills and attitude to identify current resource use, comply with environmental regulations and seek opportunities to improve resource efficiency.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify current resource use	1.1. ***Resources*** used in the workplace and potential for environmental improvements are listed following industry procedures. 1.2. Current usage of resources used in the workplace is measured using appropriate techniques. 1.3. Data are recorded and stored following workplace protocol. 1.4. All workplace resource efficiency issues are conveyed to work team and supervisor	1.1. Types of resources 1.2. Techniques in measuring current usage of resources 1.3. Calculating current usage of resources 1.4. Data recording and storage 1.5. Workplace resource efficiency issues	1.1. Listing of resources used 1.2. Measuring current usage of resources 1.3. Recording and storing of data 1.4. Conveying workplace resource efficiency issues
2. Comply with environmental regulations	2.1 ***Workplace environmental hazards*** are identified and reported to appropriate supervisor. 2.2 All workplace environmental efficiency issues are conveyed to work team and supervisor. 2.3 Environmental regulations are followed based on industry protocol. 2.4 Work toward meeting efficiency targets are practiced following environmental regulations	2.1 Types of workplace environmental hazards 2.2 Workplace environmental efficiency issues 2.3 Environmental regulations 2.4 Methods of meeting efficiency targets	2.1 Identifying and reporting workplace environmental hazards 2.2 Conveying all environmental issues. 2.3 Following environmental regulations. 2.4 Practicing meeting efficiency targets in complying environmental regulations

ELEMENTS	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Seek opportunities to improve resource efficiency	3.1 Enterprise plans to improve environmental practices and resource efficiency are followed based on industry procedures 3.2 Suggestions for improvements to workplace practices and resource efficiency are made according to industry protocol 3.3 Clarifications relating to work requirements, efficiency and impact of sustainable practices are sought from team members and/or supervisors.	3.1 Enterprise plans 3.2 Improvement of environmental practices and resource efficiency 3.3 Impact of sustainable practices on work requirements and efficiency 3.4 Preparation of environmental plan 3.5 Sustainable practices	3.1 Following enterprise plans to improve environmental practices and resource efficiency 3.2 Making suggestions for improvements to workplace practices and resource efficiency 3.3 Seeking clarifications relating to work requirements and efficiency and impact of sustainable practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Resources	• Electric • Water • Fuel • Telecommunications • Supplies • Materials
2. Workplace environmental hazards	• Biological hazards • Chemical and dust hazards • Physical hazards

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Identified current resource use 1.2 Complied with environmental regulations 1.3 Sought opportunities to improve resource efficiency
2. Resource Implications	**The following resources should be provided:** 2.1 Workplace 2.2 Tools, materials and equipment relevant to the tasks 2.3 PPE 2.4 Manuals and references
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration 3.2 Oral questioning 3.3 Written examination
4. Context for Assessment	4.1 Competency assessment may occur in workplace or any appropriately simulated environment 4.2 Assessment shall be observed while task are being undertaken whether individually or in-group

COMMON COMPETENCIES

UNIT TITLE : APPLY QUALITY STANDARDS

UNIT CODE : UTL311203

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes needed to apply quality standards in the workplace. The unit also includes the application of relevant safety procedures and regulations, organization procedures and customer requirements.

ELEMENT	PERFORMANCE CRITERIA ***Italicized Bold*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Assess quality of received materials or components	1.1. Work instructions are obtained and work is carried out in accordance with standard operating procedures 1.2. Received ***materials or component parts*** are checked against workplace standards and specifications 1.3. Faulty material or components related to work are identified and isolated 1.4. ***Faults*** and any identified causes are recorded and/or reported to the supervisor concerned in accordance with workplace procedures 1.5. Faulty materials or components are replaced in accordance with workplace procedures	1.1. Relevant production processes, materials and products 1.2. Characteristics of materials, software and hardware used in production processes 1.3. Quality checking procedures 1.4. Quality Workplace procedures 1.5. Identification of faulty materials related to work	1.1. Reading skills required to interpret work instruction 1.2. Critical thinking 1.3. Interpreting work instructions
2. Assess own work	2.1. ***Documentation*** relative to quality within the company is identified and used 2.2. Completed work is checked against workplace standards relevant to the task undertaken 2.3. Faulty pieces are identified and isolated 2.4. Information on the quality and other indicators of production performance is recorded in accordance with workplace procedures 2.5. Deviations from specified ***quality standards***, causes are documented and reported in accordance with the workplace standards operating procedures	2.1. Safety and environmental aspects of production processes 2.2. Fault identification and reporting 2.3. Workplace procedure in documenting completed work 2.4. Workplace Quality Indicators	2.1. Carry out work in accordance with OHS policies and procedures

ELEMENT	PERFORMANCE CRITERIA ***Italicized Bold*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Engage in quality improvement	3.1. Process improvement procedures are participated in relation to workplace assignment 3.2. Work is carried out in accordance with process improvement procedures 3.3. Performance of operation or quality of product or service to ensure ***customer*** satisfaction is monitored	3.1. Quality improvement processes 3.2. Company customers defined	3.1. Solution providing and decision-making 3.2. Practice company process improvement procedure

RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials/components	1.1. Materials may include but not limited to: 1.1.1. Wires 1.1.2. Cables 1.1.3. Electrical tape, etc. 1.2. Components may include but not limited to: 1.2.1. Cross-arms and braces 1.2.2. Conductors and accessories 1.2.3. Insulators, etc.
2. Faults	Faults may include but not limited to: 2.1. Components/materials not according to specification 2.2. Components/materials contain manufacturing defects 2.3. Components/materials do not conform with government regulation i.e., PEC, environmental code 2.4. Components/materials have safety defect
3. Documentation	3.1. Organization work procedures 3.2. Manufacturer's instruction manual 3.3. Customer requirements 3.4. Forms
4. Quality standards	4.1. Quality standards may relate but not limited to the following: 4.1.1. Materials 4.1.2. Component parts 4.1.3. Final product
5. Customer	5.1. Co-worker 5.2. Suppliers 5.3. Client 5.4. Organization receiving the product or service

EVIDENCE GUIDE

1. Critical aspect of competency	Assessment requires evidence that the candidate: 1.1. Carried out work in accordance with the company's standard operating procedures 1.2. Performed task according to specifications 1.3. Reported defects detected in accordance with standard operating procedures 1.4. Carried out work in accordance with the process improvement procedures
2. Resource implication	The following resources should be provided: 2.1. Materials and component parts and equipment to be used in a real or simulated electronic production situation
3. Method of assessment	Competency in this unit may be assessed through: 3.1. Observation 3.2. Questioning 3.3. Practical demonstration
4. Context of Assessment	4.1. Assessment may be conducted in the workplace or in a simulated work environment.

UNIT TITLE : **COMPLY WITH ENVIRONMENTAL PROTECTION PROCEDURES**

UNIT CODE : **UTL311206**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to implement and monitor environmental protection policies and procedures including accessing relevant information concerning environmental protection regulations and procedures, and implementing and monitoring procedures concerning environmental hazards, related control procedures, environmental training arrangements, and required records and documentation

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Access information concerning environmental protection regulations and procedures	1.1. Relevant provisions of environmental legislation and codes of practice are accurately followed 1.2. Information on workplace environmental policies, procedures and programs is stored in a readily accessible location and manner 1.3. ***Information*** is accurately and clearly explained to the work team and updated according to change in workplace policy 1.4. Information about the outcomes of environmental risk identification and control procedures is provided to the appropriate personnel	1.1. Relevant environmental protection regulations & codes of practice 1.2. Environmental risks associated with workplace operations and related precautions to control the risk 1.3. Environmental protection standards required in the workplace	1.1. Workplace reporting and recording processes and procedures 1.2. Communication skills 1.3. Accessing information and data 1.4. Ability to recognize potential environmental risks and ways of minimizing them
2. Implement and monitor procedures concerning environmental hazards	2.1 Existing and potential ***environmental hazards*** in the workplace are identified and reported 2.2 Identified hazards are assessed in relation to relevant environmental protection policies 2.3 ***Workplace procedures for dealing with hazardous events*** are implemented wherever necessary to ensure that prompt control action is taken 2.4 ***Personal protective equipment (PPE)*** are	2.1 Relevant environmental protection regulations & codes of practice 2.2 Workplace procedures and guidelines for implementing and monitoring procedures concerning environmental hazards 2.3 Workplace environmental	2.1 Workplace reporting and recording processes and procedures 2.2 Communication skills 2.3 Problem solving skills 2.4 Ability to: 2.5 recognize potential environmental hazards and ways of minimizing them 2.6 counsel, advise and inform others

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	obtained and used in accordance with job requirements 2.5 Hazardous events are investigated to identify causes, and control measures are implemented to prevent recurrence and minimize risks of such events	hazards and related hazard control measures 2.4 Equipment and resources required when implementing and monitoring environmental protection procedures 2.5 Organizational structure and site layout	on environmental protection matters 2.7 identify and correctly use equipment and vehicles in accordance with environmental protection regulations and guidelines
3. Implement and monitor environmental control procedures	3.1 Existing environmental protection measures are implemented, monitored and reviewed 3.2 Work procedures to protect environment are implemented and adherence to them by the work group is monitored 3.3 Required improvements to existing control measures are identified, including required resources for implementation, and reported to appropriate personnel	3.1 Relevant environmental protection regulations & codes of practice 3.2 Workplace procedures and guidelines for implementing and monitoring environmental control procedures 3.3 Equipment and resources required when implementing and monitoring environmental control procedures 3.4 Organizational structure and site layout	3.1 Workplace reporting and recording processes and procedures 3.2 Communication skills 3.3 Accessing information and data 3.4 Problem solving skills 3.5 Ability to counsel, advise and inform others on environmental control procedures 3.6 Ability to identify and correctly use equipment and vehicles in accordance with environmental control procedures, regulations and guidelines

RANGE OF VARIABLES

VARIABLE	RANGE
1 Environment	Environment may include: 1.1 Indoor 1.2 Outdoor 1.3 Marine 1.4 Atmospheric
2 Information	Information/documents may include: 2.1 Workplace procedures and practices related to environmental protection, including all financial, operating and customer service policies and procedures 2.2 OHS and environmental protection regulations 2.3 Workplace housekeeping procedures and policies 2.4 Code of practice for environmental protection 2.5 Material safety data sheets 2.6 Policies and procedures for entry and work in confined spaces 2.7 Manufacturer's instructions concerning the use and servicing of equipment 2.8 Emergency procedures 2.9 Regulations and policies concerning noise, waste disposal/reprocessing, handling of dangerous goods/hazardous substances and other environmental protection issues 2.10 Standards and certification requirements 2.11 Quality assurance procedures
3 Appropriate personnel	Appropriate personnel may include: 3.1 Workplace personnel including supervisors and management 3.2 Site visitors 3.3 Contractors 3.4 Official representatives
4 Environmental hazards	Environmental hazards may include: 4.1 Oils and lubricants 4.2 Exhaust fumes 4.3 Gas 4.4 Smoke 4.5 Chemicals and detergents 4.6 Rubbish 4.7 Noise 4.8 Wastes

VARIABLE	RANGE
5 Workplace procedures for dealing with hazardous events	Procedures may include: 5.1 Inspection and housekeeping 5.2 Maintenance including plant and equipment 5.3 Purchasing 5.4 Evacuation 5.5 Hazardous substance containment 5.6 Operational instruction 5.7 Environmental information including incident and management practices 5.8 Specific hazardous materials policies and procedures 5.9 Risk assessment and control 5.10 First aid
6 Personal protective equipment (PPE)	PPE may include: 6.1 Gloves 6.2 Safety headwear and footwear 6.3 Safety glasses 6.4 Two-way radios 6.5 High visibility clothing

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and monitored environmental hazards in the workplace 1.2 Implemented effective procedures for dealing with hazardous events 1.3 Monitored workplace adherence to environmental practices 1.4 Communicated effectively with the team members
2. Resource implications	The following resources should be provided: 2.1 Environmental protection regulations and guidelines 2.2 OHS regulations and hazard prevention policies and procedures 2.3 workplace environmental protection policies, procedures and instructions 2.4 equipment/vehicle manufacturer's operating and servicing instructions
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Direct observation 3.2 Oral or written questioning 3.3 Questions/interview Assessment of underpinning knowledge and practical skills may be combined
4. Context of assessment	4.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 4.2 Assessment may be conducted in the workplace or a simulated environment

UNIT OF COMPETENCY: OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS

UNIT CODE : UTL311201

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying, interpreting, applying services to specifications and manuals and storing manuals.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify and access specification/ manuals	1.1 Appropriate manuals are identified and accessed as per job requirements 1.2 Version and date of manual are checked to ensure that correct specification and procedures are identified	1.1 Types of manuals used in distribution lines 1.2 Identification of symbols used in the manuals	1.1 Reading and comprehension skills 1.2 Identifying and interpreting manuals and specifications 1.3 Accessing information and data
2. Interpret manuals	2.1 Relevant sections, chapters of specifications/ manuals are located in relation to the work to be conducted 2.2 Information and procedure in the manual are interpreted in accordance with industry practices	2.1 Types of manuals used in distribution lines 2.2 Types of symbols used in manuals 2.3 Identification of units of measurements 2.4 Unit conversion	2.1 Reading and comprehension skills 2.2 Identifying and interpreting manuals and specifications 2.3 Accessing information and data 2.4 Applying conversion of units of measurements
3. Apply information in manual	3.1 ***Manual*** is interpreted according to job requirements 3.2 Work steps are correctly identified in accordance with manufacturer's specification 3.3 Manual data are applied according to the given task 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications	3.1 Types of manuals used in distribution lines 3.2 Types and application of symbols used in the manuals 3.3 Unit conversion	3.1 Reading and comprehension skills 3.2 Applying information from manuals 3.3
4. Store manuals	4.1 Manual or specification is stored appropriately to prevent damage, ready access and updating of information when required in accordance with company requirements	4.1 Types of manuals used in distribution lines 4.2 Manual storing and maintaining procedures	4.1 Reading and comprehension skills 4.2 Storing and maintaining manuals

RANGE OF VARIABLES

VARIABLE	RANGE
1. Procedures, Specifications and Manuals of Instructions	Kinds of Manuals: 1.1 Manufacturer's Specification Manual 1.2 Repair Manual 1.3 Maintenance Procedure Manual 1.4 Periodic Maintenance Manual

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and accessed specification/manuals as per job requirements 1.2 Interpreted manuals in accordance with industry practices 1.3 Applied information in manuals according to the given task 1.4 Stored manuals in accordance with company requirements
2. Resource implications	The following resources should be provided: 2.1 All manuals/catalogues relative to the sector
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Direct observation 3.2 Questions/interview Assessment of underpinning knowledge and practical skills may be combined
4. Context of assessment	4.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 4.2 Assessment may be conducted in the workplace or a simulated environment

UNIT OF COMPETENCY : OPERATE AND MAINTAIN LINE TOOLS AND EQUIPMENT

UNIT CODE : UTL311205

DESCRIPTOR : This unit covers the knowledge, skills and attitude to operate and maintain distribution line tools and equipment. This unit will involve working in a team environment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for work	1.1. Work instruction is secured and interpreted according to ***job requirements*** 1.2. Relevant ***occupational health and safety requirements*** are identified following job specifications 1.3. Relevant distribution line ***tools, equipment and hardware*** are identified and requested in accordance with job specifications	1.1. Relevant occupational health and safety standards 1.2. Types and usage of distribution line tools and equipment 1.3. Basic preventive maintenance servicing for distribution line equipment	1.1. Following and complying occupational health and safety standards 1.2. Following procedures for the safe use of distribution line tools and equipment 1.3. Performing basic preventive maintenance servicing for distribution line equipment
2. Prepare distribution line tools and equipment	2.1. Personal protective equipment (PPE) are obtained following job requirements 2.2. Distribution line tools, equipment and hardware are acquired and secured in line with job requirements 2.3. Distribution line tools are tested/set following manufacturer's standards or recommendation	2.1. Types and functions of PPEs 2.2. Types and usage of distribution line tools and equipment 2.3. Basic preventive maintenance servicing for distribution line equipment 2.4. Proper testing of distribution line tools	2.1. Following and complying occupational health and safety standards 2.2. Following procedures for the safe use of distribution line tools and equipment 2.3. Performing basic preventive maintenance servicing for distribution line equipment 2.4. Testing skills
3. Operate distribution line tools and equipment	3.1. PPE are used in line with job requirements 3.2. Distribution line tools and equipment are used in line with job requirements	3.1. Proper usage of PPEs 3.2. Proper procedure for the use of distribution line tools and equipment 3.3. Basic preventive maintenance servicing for distribution line equipment	3.1. Using PPEs 3.2. Following procedures for the safe use of distribution line tools and equipment 3.3. Performing basic preventive maintenance servicing for distribution line equipment

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Check condition of distribution line tools and equipment	4.1. Distribution line tools and equipment are identified according to classification and job requirements 4.2. Non-functional distribution line tools and equipment are segregated and labeled according to classification 4.3. Safety of distribution line tools and equipment are observed in accordance with manufacturer's instructions 4.4. Condition of PPE are checked in accordance with manufacturer's instructions	4.1. Classification of distribution line tools and equipment 4.2. Proper safety procedure for the use of distribution line tools and equipment 4.3. Basic preventive maintenance servicing for distribution line equipment	4.1. Classifying distribution line tools and equipment 4.2. Following and complying occupational health and safety standards 4.3. Following procedures for the safe use of distribution line tools and equipment 4.4. Performing basic preventive maintenance servicing for distribution line equipment
5. Perform basic preventive maintenance	5.1. Appropriate lubricants are identified according to types of equipment 5.2. Equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications 5.3. Distribution line tools are cleaned and tested according to standard procedures 5.4. Distribution line tools and equipment are inspected, and repaired and replaced, if necessary, after use 5.5. Work place is cleaned and kept in safe state in line with OHSA regulations	5.1. Types and usage of lubricants for distribution line equipment 5.2. Proper procedure for the use and maintenance of distribution line tools and equipment 5.3. Basic preventive maintenance servicing for distribution line equipment 5.4. Applicable OHSA regulations in preventive maintenance	5.1. Identifying types and usage of lubricants 5.2. Following procedures for the safe use and maintenance of distribution line tools and equipment 5.3. Performing basic preventive maintenance servicing for distribution line equipment 5.4. Following OHSA regulations
6. Store tools and equipment	6.1. Inventory of distribution line tools and equipment are conducted and recorded as per company practices 6.2. Distribution line tools and equipment are stored safely in appropriate locations in accordance with manufacturer's specifications or company procedures	6.1. Proper procedure for the inventory and storage of distribution line tools and equipment	6.1. Following procedures for the inventory and storage of distribution line tools and equipment 6.2. Inventory skills 6.3. Proper storage and handling skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Job requirements	1.1. Erect pole 1.2. Perform overhead distribution line work 1.3. Perform cold-line maintenance work 1.4. Perform ground line maintenance work
2. Occupational health and safety requirements	May include but not limited to: 2.1. Personal protective equipment (PPE) 2.1.1. Safety hat 2.1.2. Safety goggles 2.1.3. Safety gloves 2.1.4. Safety shoes 2.1.5. Working clothes 2.2. Installation of grounding cluster
3. Distribution line tools, equipment and hardware	May include but not limited to: 3.1. Hand tools 3.1.1. Pliers 3.1.2. Screwdrivers 3.1.3. Adjustable wrenches 3.1.4. Ball peen hammer 3.1.5. Auger bit 3.1.6. Hacksaw/cutting tools 3.1.7. Steel tape 3.2. Equipment 3.2.1. Motorized capstan 3.2.2. Climbing gears 3.2.3. Line truck/Boom truck 3.3. Set of hot line trailer 3.4. Hardware 3.4.1. Insulator 3.4.2. Machine bolts 3.4.3. Suspension clamp assembly (ACSR/OHGW) 3.4.4. Strain clamp assembly(ACSR/OHGW) 3.4.5. Overhead ground wires 3.4.6. Cross-arms and braces 3.4.7. Conductors and accessories

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1. Demonstrates ability to identify and comply with occupational health and safety standards in operating and maintaining distribution line tools and equipment 1.2. Demonstrates ability to identify and safely use distribution tools and equipment 1.3. Demonstrates ability to perform basic preventive maintenance servicing for distribution line equipment
2. Resource Implications	The following resources should be provided: 2.1. Distribution line tools, equipment and PPE 2.2. Work area
3. Method of assessment	Competency in this unit may be assessed through: 3.1. Observation and Oral questioning 3.2. Demonstration with oral questioning 3.3. Written test
4. Context of assessment	4.1. Competency may be assessed in the workplace or in a simulated workplace setting 4.2. Assessment shall be undertaken either individually or part of team under limited supervision

UNIT TITLE : PERFORM COMPUTER OPERATIONS
UNIT CODE : UTL311207
UNIT DESCRIPTOR : This unit covers the knowledge, skills, (and) attitudes and values needed to perform computer operations which include inputting, accessing, producing and transferring data using the appropriate hardware and software

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for task to be undertaken	1.1. Requirements of task are determined 1.2. Appropriate ***hardware*** and ***software*** are selected according to task assigned and required outcome 1.3. Task is planned to ensure ***OH&S guidelines*** and procedures are followed	1.1. Main types of computers and basic features of different operating systems 1.2. Main parts of a computer 1.3. Information on hardware and software 1.4. Data security guidelines	1.1. Reading and comprehension skills required to interpret work instruction and to interpret basic user manuals. 1.2. Communication skills to identify lines of communication, request advice, follow instructions and receive feedback. 1.3. Interpreting user manuals and security guidelines
2. Input data into computer	2.1. Data are entered into the computer using appropriate program/application in accordance with company procedures 2.2. Accuracy of information is checked and information is saved in accordance with standard operating procedures 2.3. Inputted data are stored in ***storage media*** according to requirements 2.4. Work is performed within ***ergonomic guidelines***	2.1. Basic ergonomics of keyboard and computer user 2.2. Storage devices and basic categories of memory 2.3. Relevant types of software	2.1. Technology skills to use equipment safely including keyboard skills. 2.2. Entering data
3. Access information using computer	3.1. Correct program/application is selected based on job requirements 3.2. Program/application containing the information required is accessed according to company procedures 3.3. ***Desktop icons*** are correctly selected, opened and closed for navigation purposes	3.1. General security, privacy legislation and copyright 3.2. Productivity Application 3.3. Business Application	3.1. Accessing information 3.2. Searching and browsing files and data

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.4. Keyboard techniques are carried out in line with OH&S requirements for safe use of keyboards		
4. Produce/ output data using computer system	4.1. Entered data are processed using appropriate software commands 4.2. Data printed out as required using computer hardware/peripheral devices in accordance with standard operating procedures 4.3. Files, data are transferred between compatible systems using computer software, hardware/ peripheral devices in accordance with standard operating procedures	4.1. Computer application in printing, scanning and sending facsimile 4.2. Types and function of computer peripheral devices	4.1. Computer data processing 4.2. Printing of data 4.3. Transferring files and data
5. Maintain computer equipment and systems	5.1. Systems for cleaning, minor ***maintenance*** and replacement of consumables are implemented 5.2. Procedures for ensuring security of data, including regular back-ups and virus checks are implemented in accordance with standard operating procedures 5.3. Basic file maintenance procedures are implemented in line with the standard operating procedures	5.1. Computer equipment/ system basic maintenance procedures 5.2. Viruses 5.3. OH & S principles and responsibilities 5.4. Calculating computer capacity 5.5. System Software 5.6. Basic file maintenance procedures	5.1. Removing computer viruses from infected machines 5.2. Making backup files

RANGE OF VARIABLES

VARIABLE	RANGE
1. Hardware and peripheral devices	May include: 1.1. Personal computers 1.2. Networked systems 1.3. Communication equipment 1.4. Printers 1.5. Scanners 1.6. Keyboard 1.7. Mouse
2. Software	Software includes the following but not limited to: 2.1. Word processing packages 2.2. Data base packages 2.3. Internet 2.4. Spreadsheets
3. OH & S guidelines	3.1. OHS guidelines 3.2. Enterprise procedures
4. Storage media	Storage media include the following but not limited to: 4.1. diskettes 4.2. CDs 4.3. zip disks 4.4. hard disk drives, local and remote
5. Ergonomic guidelines	May include: 5.1. Types of equipment used 5.2. Appropriate furniture 5.3. Seating posture 5.4. Lifting posture 5.5. Visual display unit screen brightness
6. Desktop icons	Icons include the following but not limited to: 6.1. directories/folders 6.2. files 6.3. network devices 6.4. recycle bin
7. Maintenance	May include: 7.1. Creating more space in the hard disk 7.2. Reviewing programs 7.3. Deleting unwanted files 7.4. Backing up files 7.5. Checking hard drive for errors 7.6. Using up to date anti-virus programs 7.7. Cleaning dust from internal and external surfaces

EVIDENCE GUIDE

1. Critical aspect of competency	Assessment requires evidence that the candidate: 1.1. Selected and used hardware components correctly and according to the task requirement 1.2. Identified and explain the functions of both hardware and software used, their general features and capabilities 1.3. Produced accurate and complete data in accordance with the requirements 1.4. Used appropriate devices and procedures to transfer files/data accurately 1.5. Maintained computer system
2. Resource implication	The following resources should be provided: 2.1. Computer hardware with peripherals 2.2. Appropriate software
3. Method of assessment	Competency in this unit may be assessed through: 3.1. Observation 3.2. Questioning 3.3. Practical demonstration
4. Context of Assessment	4.1. Assessment may be conducted in the workplace or in a simulated work environment

CORE COMPETENCIES

UNIT OF COMPETENCY : ERECT ELECTRIC DISTRIBUTION POLE

UNIT CODE : UTL741312

DESCRIPTOR : This unit covers the knowledge, skills and attitude required to erect distribution line poles. This unit includes competencies for installing new distribution line pole as well as transporting pole from stockyard to jobsite, performing pole spotting, hole digging, grounding and pole setting/erection and right of way clearing. This involves working with a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for work	1.1. ***Work instructions*** are secured and interpreted according to job requirements 1.2. Relevant ***occupational health and safety requirements*** are identified following job specifications 1.3. Relevant distribution line ***tools, equipment and hardware/materials*** are identified, requested and acquired in accordance with construction specifications 1.4. Personal protective equipment (PPE) are obtained following job requirements	1.1. Oral and written communication 1.2. Basic Mathematics (MDAS) 1.3. Units conversion 1.4. Soil composition 1.5. Manual erection procedures 1.6. Boom truck erection procedures 1.7. Usage of PPE's 1.8. Appropriate tools for pole erection 1.9. Interpret staking sheets and job order 1.10. OSH procedures 1.11. Line clearances 1.12. Right of Way clearances 1.13. DENR and LGU ordinances on vegetation clearing	1.1. Interpretation skills 1.2. Reading skills 1.3. Preparation skills 1.4. Planning skills 1.5. Communication skills 1.6. Analytical skills
2. Perform pole loading, hauling and spotting	2.1. Appropriate distribution line tools and equipment are used in line with job requirements 2.2. Personal protective equipment (PPE) are used following job requirements 2.3. Loading and unloading procedure for poles is performed following ***safety requirements*** 2.4. Poles hauling and pole spotting (unloading) is performed based on staking sheet.	2.1. Oral and written communication 2.2. Basic hand signal 2.3. Radio 2.4. Basic Mathematics (MDAS) 2.5. Units conversion 2.6. Usage of PPE's 2.7. Appropriate tools and equipment for pole loading, hauling and spotting 2.8. Interpret staking sheets and job order 2.9. OSH procedures	2.1. Interpretation skills 2.2. Reading skills 2.3. Communication skills 2.4. Analytical skills 2.5. Lifting skills 2.6. Knot tying skills
3. Perform pole hole digging, grounding	3.1 Occupational safety and health (OSH) standards are complied during	3.1 Oral and written communication 3.2 Hand signal	3.1. Interpretation skills 3.2. Reading skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
and setting/ erection	erection/set-up of distribution poles. 3.2 Distribution line tools, equipment and hardware are used in line with ***construction specifications*** 3.3 Personal protective equipment (PPE) are used following job requirements 3.4 Pole hole digging is performed following established depth requirements 3.5 Pole grounding is installed in accordance with construction specifications and staking sheets. 3.6 ***Pole setting/erection procedure*** is performed in line with job requirements 3.7 Where necessary, guy wires are installed for corner, angle and dead-end poles. 3.8 Good housekeeping is performed following established procedure.	communication 3.3 Radio communication 3.4 Basic Mathematics (MDAS) 3.5 Units conversion 3.6 Soil composition 3.7 Manual erection procedures 3.8 Boom truck erection procedures 3.9 Usage of PPE's 3.10 Appropriate tools for pole hole digging, grounding and setting/ erection 3.11 Interpret staking sheets and job order 3.12 OSH procedures	3.3. Communication skills 3.4. Analytical skills 3.5. Digging skills
4. Clear right of way	4.1 Distribution line poles and guy are inspected based construction specifications 4.2 Vegetation and other obstructions are identified based on ***job requirements*** 4.3 Vegetation and other obstructions are cleared based on construction specifications and safety requirements	4.1. Oral and written communication 4.2. Hand signal communication 4.3. Radio communication 4.4. Basic MDAS 4.5. Units conversion 4.6. Soil composition 4.7. Plants and trees classifications 4.8. Usage of PPE's 4.9. Appropriate tools and equipment for right of way clearing 4.10. Interpret staking sheets and job order 4.11. OSH procedures 4.12. Line clearances 4.13. Right of Way clearances 4.14. DENR and LGU ordinances on vegetation clearing	4.1. Interpretation skills 4.2. Reading skills 4.3. Communication skills 4.4. Analytical skills 4.5. Proper usage of Chainsaw 4.6. Proper usage of "bolo"

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work instructions	May include but are not limited to: 1.1 Job order 1.2 Staking sheets
2. Occupational health and safety requirements	May include but are not limited to: 2.1 Personal protective equipment (PPE) 2.1.1 Hard hat/safety hat 2.1.2 Goggles/eye protector 2.1.3 Work gloves 2.1.4 Line worker boots 2.1.5 Working clothes 2.1.6 Rain suits 2.1.7 Rubber boots 2.2 Pole climbing equipment 2.2.1. Safety strap/cord 2.2.2. Body belt 2.2.3. Pair of climbers
3. Distribution line tools, equipment and hardware/ materials	May include but are not limited to: 3.1 Tools 3.1.1. Ropes/Bull line/Sling 3.1.2. Cant hook 3.1.3. Digging bar/ Tamping bar 3.1.4. Pole pike 3.1.5. Pole jenny 3.1.6. Straight shovel (long and short) 3.1.7. Pole hole digger 3.1.8. Spoon shovel 3.1.9. Butting board 3.1.10. Ball-peen hammer 3.1.11. Ruler (wood, folding) 3.1.12. Pliers 3.1.13. Auger bit 3.1.14. Working sign boards 3.1.15. Bolt cutter 3.2 Equipment 3.2.1. Trailer 3.2.2. Line truck 3.2.3. Boom truck or derrick truck/Auger truck 3.2.4. Wench 3.2.5. Binder 3.2.6. Ratchet 3.3 Hardware/materials 3.3.1. Ground wire 3.3.2. Ground wire staple 3.3.3. Butt plate/Ground rods 3.3.4. Pole 3.3.4.1. Wood pole (creosoted & tanalized) 3.3.4.2. Steel pole 3.3.4.3. Concrete pole

VARIABLE	RANGE
4. safety requirements	May include but are not limited to: 4.1 Length and class of the pole is established. 4.2 Poles are securely fastened. 4.3 Warning devices are installed. 4.4 Appropriate PPEs are used. 4.5 Manpower and equipment requirements are identified
5. construction specifications	5.1 specifications for 13.2 / 7.62 KV line construction 5.2 specifications for 34.5 / 20 KV line construction 5.3 specifications for other distribution utilities
6. Pole setting/ erection procedure	6.1 Determine depth of hole 6.2 Determine pole facing
7. Job requirements	7.1 staking sheets 7.2 construction specifications

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrates knowledge of different pole erection methods 1.2 Demonstrates ability to identify and follow occupational safety and health standards for line workers 1.3 Demonstrates ability to identify and use of distribution line tools, equipment and hardware 1.4 Demonstrates ability to perform pole loading, pole hauling, pole spotting, pole hole digging, pole grounding and pole setting/erection 1.5 Demonstrate ability to perform right of way clearing 1.6 Demonstrates ability to communicate and work in a team environment
2. Resource implications	The following resources should be available: 2.1 Tools, equipment, hardware and PPE (see range of variables) 2.2 Site or work area 2.3 Poles
3. Method of assessment	Competency may be assessed through: 3.1 Direct observation with oral questioning 3.2 Demonstration of skills with oral questioning 3.3 Written test 3.4 Third party report (Instructor/Trainor's report)
4. Context of assessment	4.1 Competency maybe assessed in the workplace or in a simulated workplace setting 4.2 Assessment shall be undertaken either individually or part of team under limited supervision

UNIT OF COMPETENCY : CLIMB POLE AND INSTALL POLE ASSEMBLY AND CONDUCTORS

UNIT CODE : UTL741313

DESCRIPTOR : This unit covers the outcomes required for climbing pole and installing pole top, anchor, guy, conductor (primary/ secondary), grounding assemblies. The scope of this unit covers climbing techniques, dressing/framing of pole, installing pole anchor and guy, conductor pay-out/stringing, tensioning, armoring and tying of conductors. This involves working with a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for work	1.1 Work instruction is secured and interpreted according to job requirements 1.2 Relevant ***occupational safety and health requirements*** are identified following job specifications 1.3 Relevant distribution line ***tools, equipment and hardware*** are identified, requested and acquired in accordance with construction specifications 1.4 Personal protective equipment (PPE) are obtained following job requirements	1.1 Oral and written communication 1.2 Basic Mathematics (MDAS) 1.3 Units conversion 1.4 Climbing techniques 1.5 Usage of PPE's 1.6 Appropriate tools and equipment for pole climbing 1.7 Interpret staking sheets and job order 1.8 OSH procedures and safety requirements 1.9 Line hardware and conductors	1.1. Interpretation skills 1.2. Reading skills 1.3. Preparation skills 1.4. Planning skills 1.5. Communication skills 1.6. Analytical skills
2. Climb and dress/frame pole	2.1. Pole climbing technique is demonstrated in line with occupational health and safety standards. 2.2. Installation of ***pole top assembly*** is performed in accordance with construction specifications 2.3. Boring is performed in accordance with the construction specifications 2.4. Housekeeping procedures are performed in line with established procedure	2.1. Oral and written communication 2.2. Hand signal communication 2.3. Radio communication 2.4. Basic Mathematics (MDAS) 2.5. Units conversion 2.6. Climbing techniques 2.7. Usage of PPE's 2.8. Appropriate tools and equipment for pole climbing and installation of pole top and conductor assembly 2.9. Interpret staking sheets and job order 2.10. OSH procedures and safety requirements 2.11. Line hardware and conductors 2.12. Construction	2.1. Interpretation skills 2.2. Reading skills 2.3. Communication skills 2.4. Analytical skills 2.5. Skills in usage of Hand line 2.6. Knot tying skills 2.7. Climbing Skills 2.8. Boring Skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		specifications	
3. Install pole anchor and guy	3.1. Boring is performed in accordance with the construction specification 3.2. Guy wire is installed on the pole with other hardware based on construction specification 3.3. ***Anchor*** is installed based on type of construction.	3.1. Oral and written communication 3.2. Hand signal communication 3.3. Radio communication 3.4. Basic Mathematics (MDAS) 3.5. Units conversion 3.6. Technology: 3.7. Types of guy wire 3.8. Types of anchor 3.9. Climbing techniques 3.10. Usage of PPE's 3.11. Appropriate tools and equipment for pole climbing and installation of guy and anchor assemblies 3.12. Interpret staking sheets and job order 3.13. OSH procedures and safety requirements 3.14. Line hardware 3.15. Construction specifications 3.16. Ratchet and guy grip operation	3.1. Interpretation skills 3.2. Reading skills 3.3. Communication skills 3.4. Analytical skills 3.5. Skills in usage of Hand line 3.6. Knot tying skills 3.7. Climbing Skills 3.8. Boring Skills
4. Perform stringing and tensioning of conductor (primary/ secondary)	4.1. Conductor is prepared with pay-out stand. 4.2. Conductor is pulled out from the ***conductor rack (reel)*** to various electric poles. 4.3. Conductor is inspected for cuts and kinks 4.4. Damaged portion of conductor are corrected based on ***conductor splicing standards*** 4.5. Proper sequence of conductor installation is followed based on construction specifications. 4.6. Conductor is installed on the conductor support based on construction specifications. 4.7. Tensioning is applied to attain the required sag of conductor.	4.1. Oral and written communication 4.2. Hand signal communication 4.3. Radio communication 4.4. Basic Mathematics (MDAS) 4.5. Units conversion 4.6. Conductor types and sizes 4.7. Conductor splicing techniques 4.8. Compression tool and bolt cutter 4.9. Usage of PPE's 4.10. Appropriate tools and equipment for pole climbing 4.11. Interpret staking sheets and job order 4.12. OSH procedures and safety requirements 4.13. Line hardware 4.14. Construction specifications 4.15. Ratchet and guy grip operation	4.1. Interpretation skills 4.2. Reading skills 4.3. Communication skills 4.4. Analytical skills 4.5. Skills in usage of Hand line 4.6. Knot tying skills 4.7. Climbing Skills 4.8. Basic Hand signal -

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		4.16. Sagging requirements	
5. Apply Conductor Armoring and Tying	5.1. Armor rod and tie wire are prepared based construction specifications 5.2. Armoring is applied for protection of conductor. 5.3. ***Tying of conductors*** is performed based on construction specifications	5.1. Oral and written communication 5.2. Hand signal communication 5.3. Radio communication 5.4. Basic Mathematics (MDAS) 5.5. Units conversion 5.6. Side groove and top groove tying 5.7. Armor rods and conductor sizes 5.8. Conductor splicing techniques 5.9. Compression tool and bolt cutter 5.10. Usage of PPE's 5.11. Interpret staking sheets and job order 5.12. OSH procedures and safety requirements 5.13. Line hardware 5.14. Construction specifications 5.15. Ratchet and cum-a-long operation 5.16. Sagging requirements	5.1. Interpretation skills 5.2. Reading skills 5.3. Communication skills 5.4. Analytical skills 5.5. Skills in usage of Hand line 5.6. Knot tying skills 5.7. Climbing Skills 5.8. Basic Hand signal 5.9. Groove tying skills
6. Perform line grounding	6.1. Grounding assembly is identified based on pole type 6.2. Pole grounding is applied based on pole top assembly and installed line devices 6.3. Taps and jumper are installed in conformity with line construction specifications.	6.1. Oral and written communication 6.2. Hand signal communication 6.3. Radio communication 6.4. Basic Mathematics (MDAS) 6.5. Slack requirements 6.6. Conductor splicing techniques 6.7. Compression tool and bolt cutter 6.8. Usage of PPE's 6.9. Interpret staking sheets and job order 6.10. OSH procedures and safety requirements 6.11. Line hardware 6.12. Construction specifications	6.1. Interpretation skills 6.2. Reading skills 6.3. Communication skills 6.4. Analytical skills 6.5. Skills in usage of Hand line 6.6. Knot tying skills 6.7. Climbing Skills 6.8. Basic Hand signal

RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational health and safety requirements	May include but not limited to: 1.1 Personal protective equipment (PPE) 1.1.1. Hard hat/Safety hat 1.1.2. Goggles/Eye protector 1.1.3. Work gloves 1.1.4. Line worker boots/Rubber boots 1.1.5. Working clothes 1.1.6. Rain suits 1.2 Pole climbing equipment 1.2.1. Safety strap/cord 1.2.2. Body belt 1.2.3. pair of climbers
2. Distribution line tools, equipment and hardware	May include but not limited to: 2.1 Tools 2.1.1. Rope/Hand line 2.1.2. Adjustable wrench or line worker wrench 2.1.3. Pliers 2.1.4. Ball peen hammer 2.1.5. Measuring rule / steel tape 2.1.6. Screw driver 2.1.7. Auger bit 2.1.8. Ratchet 2.1.9. Cum-a-long 2.1.10. Bolt cutter 2.1.11. wire skinning knife 2.1.12. Bolo/Sickle 2.1.13. Bull line 2.1.14. Pulling line 2.1.15. Conductor rack 2.1.16. Compression tool 2.1.17. Pulley 2.2 Equipment 2.1.1 Boom truck or derrick truck 2.1.2 Chain saw 2.1.3 Pole climbing equipment 2.1.4 Wench 2.1.5 Ladder 2.3 Construction materials for pole top, anchor, guy, conductor, grounding assemblies 2.4 Conductors or wires (bare or insulated) 2.4.1. Aluminum Conductor Steel Reinforced (ACSR) 2.4.2. Copper wire
3. pole top and	May include:

VARIABLE	RANGE
conductor assembly	3.1 Primary 3.1.1. Single-phase 3.1.2. Vee-phase 3.1.3. Three-phase 3.2 Secondary 3.2.1. Open 3.2.2. Underbuilt
4. Anchor assembly	May include: 4.1 Anchor 4.2 Line anchors 4.2.1. expanding 4.2.2. screw or swamp type 4.2.3. plate 4.2.4. cone
5. Conductor rack (Reel)	May include: 5.1 Stationary or fixed reel 5.2 Mounted or moving reel
6. Conductor splicing standards	May include: 6.1 Compression sleeve 6.2 Full tension splice 6.3 Compression connector 6.4 Conductor splice
7. Tying of conductors	May include: 7.1 Top groove tie 7.2 Side groove tie
8. Line construction specifications	May include: 8.1 specifications for 13.2 / 7.6 KV line construction 8.2 specifications for 34.5 / 20 KV line construction 8.3 specifications for other distribution utilities

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrates ability to interpret job requirements 1.2 Demonstrates ability to dress/frame Pole 1.3 Demonstrates ability to install pole anchor and guy 1.4 Demonstrates ability to string and tension conductor 1.5 Demonstrates ability to apply conductor armoring and tying 1.6 Demonstrate ability to install appropriate grounding assembly
2. Resource implications	The following resources should be available: 2.1 Tools, equipment, hardware and PPE (see range of variables) 2.2 Site or work area 2.3 Boom truck (if necessary)
3. Method of assessment	Competency may be assessed through: 3.1 Direct observation with oral questioning 3.2 Demonstration of skills with oral questioning 3.3 Written test
4. Context of assessment	4.1 Competency maybe assessed in the workplace or in a simulated workplace setting 4.2 Assessment shall be undertaken either individually or part of team under limited supervision

UNIT OF COMPETENCY : INSTALL SINGLE-PHASE DISTRIBUTION LINE EQUIPMENT AND DEVICES

UNIT CODE : UTL741314

DESCRIPTOR : This unit covers the outcomes required for installing single-phase distribution line equipment and devices. The scope of this unit covers performing installation of distribution line equipment and devices as well as tapping/connecting line equipment and devices to distribution line. This involves working with a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for work	1.1. ***Work instructions*** are secured and interpreted according to job requirements 1.2. Relevant ***occupational safety and health requirements*** are identified following job specifications 1.3. Relevant distribution line ***tools, equipment, materials and devices*** are identified, requested and acquired in accordance with ***construction specifications*** 1.4. Personal protective equipment (PPE) are obtained following job requirements	1.1. Oral and written communication 1.2. Basic Mathematics (MDAS) 1.3. Units conversion 1.4. Climbing techniques 1.5. Usage of PPE's 1.6. Appropriate tools and equipment for installation of line devices 1.7. Interpret staking sheets and job order 1.8. OSH procedures and safety requirements 1.9. Line hardware and conductors	1.1. Interpretation skills 1.2. Reading skills 1.3. Preparation skills 1.4. Planning skills 1.5. Communication skills 1.6. Analytical skills 1.7. Materials handling skills
2. Install single-phase line equipment and devices	2.1. ***Lifting devices*** are installed securely to the top of the pole. 2.2. Boring is performed in accordance with the construction specification 2.3. ***Line equipment and devices*** are installed in accordance with construction specifications and standards 2.4. Housekeeping is performed in line with established procedure	2.1. Oral and written communication 2.2. Hand signal communication 2.3. Radio communication 2.4. Basic Mathematics (MDAS) 2.5. Unit conversion 2.6. Equipment nameplate ratings 2.7. Conductor jumper types and sizes 2.8. Compression tool and bolt cutter 2.9. Size and types of fuses 2.10. Usage of PPE's 2.11. Appropriate tools and equipment for pole climbing 2.12. Interpret staking sheets and job order 2.13. OSH procedures and safety requirements	2.1. Interpretation skills 2.2. Reading skills 2.3. Communication skills 2.4. Analytical skills 2.5. Skills in usage of transformer gin, hand line, and tag line 2.6. Knot tying skills 2.7. Climbing Skills 2.8. Basic Hand signal 2.9. Materials handling skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		2.14. Line hardware 2.15. Construction specifications	
3. Tap/Connect line equipment and devices to distribution line	3.1. Connectors and jumpers are installed between line conductors for safety, conductivity and reliability purposes. 3.2. Line tapping and connection is performed in accordance with the construction specification 3.3. Grounding for equipment is installed in accordance with line construction specifications.	3.1. Oral and written communication 3.2. Hand signal communication 3.3. Radio communication 3.4. Basic Mathematics (MDAS) 3.5. Unit conversion 3.6. Conductor jumper types and sizes 3.7. Conductor splicing techniques 3.8. Compression tool and bolt cutter 3.9. Usage of PPE's 3.10. Appropriate tools and equipment for pole climbing 3.11. Interpret staking sheets and job order 3.12. OSH procedures and safety requirements 3.13. Line hardware 3.14. Construction specifications 3.15. Slack requirements	3.1. Interpretation skills 3.2. Reading skills 3.3. Communication skills 3.4. Analytical skills 3.5. Skills in usage of Hand line 3.6. Climbing Skills 3.7. Basic Hand signal 3.8. Material handling skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work instruction	May include but are not limited to: 1.1 job order form 1.2 work order form
2. Occupational health and safety requirements	May include but not limited to: 2.1 Personal protective equipment (PPE) 2.1.1. Hard hat/Safety hat 2.1.2. Goggles/Eye protector 2.1.3. Working gloves 2.1.4. Line worker boots 2.1.5. Working clothes 2.1.6. Rain suits 2.1.7. Rubber boots 2.2 Pole climbing equipment 2.2.1. Safety strap/cord 2.2.2. Body belt 2.2.3. Pair of climbers
3. Distribution line tools, materials, equipment and devices	May include but not limited to: 3.1 Tools 3.1.1. Rope/Hand line/Bull line 3.1.2. Adjustable wrench or line worker wrench 3.1.3. Pliers 3.1.4. Ball-peen hammer 3.1.5. Measuring rule / steel tape 3.1.6. Screw driver 3.1.7. Auger bit 3.1.8. Wire skinning knife 3.1.9. Compression tool 3.2 Materials/Hardware 3.2.1. conductors 3.2.2. insulators and pins 3.2.3. ground rod 3.2.4. ground lead 3.2.5. connectors 3.2.6. ground clip 3.2.7. bolts and accessories 3.2.8. wire staple 3.2.9. wedge clamps 3.2.10. hot line clamps 3.3 Equipment and devices 3.3.1. Transformer gin 3.3.2. Cut-out 3.3.3. Distribution transformer 3.3.4. Pulley or block and tackle 3.3.5. Ladder 3.3.6. Boom truck or derrick truck 3.3.7. Pole climbing equipment
4. Lifting devices	May include:

VARIABLE	RANGE
	4.1 Transformer gin 4.2 Pulley or block and tackle 4.3 Handline / Rope / Bull line
5. construction specifications	5.1 specifications for 13.2 / 7.62 KV line construction 5.2 specifications for 34.5 / 20 KV line construction 5.3 specifications for other distribution utilities
6. line equipment and devices	May include: 6.1 distribution transformer 6.2 cut-out and lightning arrester

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1. Demonstrates ability to interpret job requirements 1.2. Demonstrates ability to install single-phase line equipment and devices 1.3. Demonstrates ability to connect single-phase line equipment and devices to distribution line
2. Resource implications	The following resources should be available: 2.1. PPE, tools, equipment and devices (see range of variables) 2.2. Site or work area
3. Method of assessment	Competency may be assessed through: 3.1. Direct observation with oral questioning 3.2. Demonstration of skills with oral questioning 3.3. Written test
4. Context of assessment	4.1. Competency maybe assessed in the workplace or in a simulated workplace setting 4.2. Assessment shall be undertaken either individually or part of team under limited supervision

UNIT OF COMPETENCY : INSTALL SINGLE-PHASE CONSUMER SERVICE CONNECTION FACILITY

UNIT CODE : UTL741315

DESCRIPTOR : This unit covers the outcomes required for installing single-phase consumer service connection facility. The scope of this unit covers installing service drop and single-phase KWH meter. This involves working with a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for work	1.1. Work instruction is secured and interpreted according to job requirements 1.2. Relevant ***occupational health and safety requirements*** are identified following job specifications 1.3. Necessary ***tools, hardware, equipment and devices*** needed for the work are identified, requested and acquired in accordance with construction specifications 1.4. Personal protective equipment (PPE) are obtained following job requirements	1.1. Oral and written communication 1.2. Basic Mathematics (MDAS) 1.3. Unit conversion 1.4. Basic geography 1.5. Types of KWH meter 1.6. Climbing techniques 1.7. Usage of PPE's 1.8. Appropriate tools and equipment for pole climbing and installation of line devices 1.9. Interpret staking sheets and job order 1.10. OSH procedures and safety requirements 1.11. Line hardware and conductors	1.1. Interpretation skills 1.2. Reading skills 1.3. Preparation skills 1.4. Planning skills 1.5. Communication skills 1.6. Analytical skills 1.7. Mapping skills
2. Install Service Drop	2.1. Relevant occupational health and safety requirements are complied following job specifications 2.2. ***Service drop accessories*** are installed according construction standards and requirements 2.3. ***Service drop cables*** are installed according construction standards and requirements 2.4. Service drop clearance is conformed with latest Philippine Electrical Code (PEC).	2.1. Oral and written communication 2.2. Hand signal communication 2.3. Radio communication 2.4. Basic Mathematics (MDAS) 2.5. Unit conversion 2.6. Service drop types and sizes 2.7. Compression tool and bolt cutter 2.8. Usage of PPE's 2.9. Appropriate tools and equipment for pole climbing 2.10. OSH procedures and safety requirements 2.11. Line hardware 2.12. Construction specifications 2.13. Sagging requirements 2.14. Vertical clearance requirements 2.15. PEC requirements	2.1. Interpretation skills 2.2. Reading skills 2.3. Communication skills 2.4. Analytical skills 2.5. Climbing Skills 2.6. Material handling skills
3. Install KWH	3.1. Relevant occupational	3.1. Oral and written	3.1. Interpretation

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
meter	health and safety requirements are complied following job specifications 3.2. Meter base is installed according to construction standards and requirements 3.3. ***KWH meter*** is installed according to construction standards and requirements 3.4. Customer is advised for completion of work and verify availability of electric power 3.5. Housekeeping procedure is performed in line with established procedure	communication 3.2. Basic Mathematics (MDAS) 3.3. Unit conversion 3.4. Basic Electricity 3.5. Types of KWH meter 3.6. Conductor jumper types and sizes 3.7. Conductor splicing techniques 3.8. Compression tool 3.9. Usage of PPE's 3.10. Appropriate tools and equipment for pole climbing 3.11. Interpret staking sheets and job order 3.12. OSH procedures and safety requirements 3.13. Line hardware 3.14. Construction specifications	skills 3.2. Reading skills 3.3. Communication skills 3.4. Analytical skills 3.5. Climbing Skills 3.6. Material handling skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational health and safety requirements	May include but not limited to: 1.1 Personal protective equipment (PPE) 1.1.1. Hard hat/Safety hat 1.1.2. Goggles/Eye protector 1.1.3. Work gloves 1.1.4. Line worker boots 1.1.5. Working clothes 1.1.6. Rubber boots 1.1.7. Rain suits 1.2 Pole climbing equipment 1.2.1. Safety strap/cord 1.2.2. Body belt 1.2.3. pair of climbers
2. Tools, hardware, equipment and devices	May include but not limited to: 2.1 Tools 2.1.1. Rope/Hand line 2.1.2. Adjustable wrench or line worker wrench 2.1.3. Pliers 2.1.4. Ball peen hammer 2.1.5. Measuring rule (wood) 2.1.6. Screw driver 2.1.7. Auger bit 2.1.8. Electric tape 2.1.9. Wire skinning knife 2.1.10. Compression/crimping tool 2.2 Equipment and devices 2.2.1. Ladder 2.2.2. Pole climbing equipment 2.2.3. KWH meter 2.2.4. Multi-tester (amps-volt) 2.3 Hardware 2.3.1 Service drop cables 2.3.2 Service connection accessories
3. Service drop accessories	May include: 3.1 Oval eye bolt/nut 3.2 Service swinging clevis 3.3 Spool insulator 3.4 Service grip / Dead-end loop clamp 3.5 Service drop wire 3.6 Service wire grip 3.7 Strain/Screw insulators 3.8 Compression connector/ Clamps
4. Service drop cable	May include: 4.1 Triplex aluminum/copper cable 4.2 Duplex aluminum/copper cable
5. KWH meter	May include: 5.1 Single phase socket type 5.2 Single phase bottom-connected

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1. Demonstrates ability to interpret job requirements 1.2. Demonstrates ability to install service drop 1.3. Demonstrates ability to install KWH meter
2. Resource implications	The following resources should be available: 2.1. PPE, tools, equipment and devices (see range of variables) 2.2. Site or work area
3. Method of assessment	Competency may be assessed through: 3.1. Direct observation with oral questioning 3.2. Demonstration of skills with oral questioning 3.3. Written test
4. Context of assessment	4.1. Competency maybe assessed in the workplace or in a simulated workplace setting 4.2. Assessment shall be undertaken either individually or part of team under limited supervision

SECTION 3 TRAINING ARRANGEMENTS

This set of standards provides Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for Electric Power Distribution Line Construction NC II.

This includes information on curriculum design; training delivery; trainee entry requirements; tools and equipment; training facilities; and trainer's qualification and institutional assessment.

3.1 CURRICULUM DESIGN

TESDA shall provide the training on the development of competency-based curricula to enable training providers develop their own curricula with the components mentioned below.

Delivery of knowledge requirements for the basic, common and core units of competency specifically in the areas of mathematics, science/technology, communication/language and other academic subjects shall be contextualized. To this end, TVET providers shall develop a Contextual Learning Matrix (CLM) to accompany their curricula.

Course Title: ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II

Nominal Training Duration:

40	hrs – Basic Competencies
60	hrs – Common Competencies
236	hrs – Core Competencies

336	hrs

Course Description:

This course is designed to develop & enhance the knowledge, skills and attitudes of a distribution construction line worker in accordance with industry standards. It covers the basic and common competencies in addition to the core competencies such as to erect distribution pole, install single –phase distribution line equipment and devices, Climb pole and install pole assembly/conductors, as well as to install single-phase consumer service connection facility. Line construction involves work on non-energized lines, particularly construction/ extension of new electric power distribution lines.

The nominal duration of 336 hours covers the required units at Electric Power Distribution Line Construction NC II. TVET providers can however, offer a longer, ladderized course covering the NC II basic, common and core units.

To obtain this, all units prescribed for this qualification must be achieved:

BASIC COMPETENCIES
(40 hours)

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
1. Participate in workplace communication	1.1. Obtain and convey workplace information	1.1.1. Describe Organizational policies 1.1.2. Read: 1.1.2.1. Effective communication 1.1.2.2. Written communication 1.1.2.3. Communication procedures and systems 1.1.3. Identify: 1.1.3.1. Different modes of communication 1.1.3.2. Medium of communication 1.1.3.3. Flow of communication 1.1.3.4. Available technology relevant to the enterprise and the individual's work responsibilities 1.1.4. Prepare different Types of question 1.1.5. Gather different sources of information 1.1.6. Apply storage system in establishing workplace information 1.1.7. Demonstrate Telephone courtesy	• Group discussion • Lecture • Demonstration	• Oral evaluation • Written examination • Observation	2 hours
	1.2. Complete relevant work related documents	1.2.1. Describe Communication procedures and systems 1.2.2. Read: 1.2.2.1. Meeting protocols 1.2.2.2. Nature of workplace meetings 1.2.2.3. Workplace interactions 1.2.2.4. Barriers of communication 1.2.3. Read instructions on work related forms/ documents 1.2.4. Practice: 1.2.4.1. Estimate, calculate and record routine workplace measures 1.2.5. Basic mathematical processes of addition, subtraction, division and multiplication	• Group discussion • Lecture • Demonstration • Role play	• Oral evaluation • Written examination • Observation	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		1.2.6. Demonstrate office activities in: 1.2.6.1. workplace meetings and discussions scenario 1.2.7. Perform workplace duties scenario following simple written notices 1.2.8. Follow simple spoken language 1.2.9. Identify the different Non-verbal communication 1.2.10. Demonstrate ability to relate to people of social range in the workplace 1.2.11. Gather and provide information in response to workplace requirements 1.2.12. Complete work related documents			
	1.3. Participate in workplace meeting and discussion	1.3.1. Identify: 1.3.1.1. types of workplace documents and forms 1.3.1.2. kinds of workplace report 1.3.1.3. Available technology relevant to the enterprise and the individual's work responsibilities 1.3.2. Read and follow instructions in applying basic mathematical concepts 1.3.3. Follow simple spoken language 1.3.4. Demonstrate ability to relate to people of social range in the workplace 1.3.5. Gather and provide information in response to workplace requirements	• Lecture • Demonstration	• Written examination • Observation	2 hours
2. Work in a team environment	2.1. Describe and identify team role and responsibility in a team.	2.1.1. Describe the team role and scope 2.1.2. Read and Definition of Team 2.1.3. Difference between team and group 2.1.4. Objectives and goals of team 2.1.5. Identify different sources of information	• Group discussion • Lecture	• Oral evaluation • Written examination	2 hours
	2.2. Describe work as a team	2.2.1. Describe team goals and objectives 2.2.2. Perform exercises in setting team goals	• Group discussion	• Oral evaluation • Observation	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		and expectations scenario 2.2.3. Identify: 2.2.3.1. individual role and responsibility 2.2.4. Practice Interacting effectively with others 2.2.5. Read: 2.2.5.1. Fundamental rights at work including gender sensitivity 2.2.5.2. Understanding individual competencies relative to teamwork 2.2.5.3. Types of individuals 2.2.5.4. Role of leaders	• Role play • Lecture	• Written examination	
3. Practice career professionalism	3.1. Integrate personal objectives with organizational goals	3.1.1. Describe performance evaluation 3.1.2. Read: 3.1.2.1. Work values and ethics (Code of Conduct, Code of Ethics, etc.) 3.1.2.2. Understanding personal objectives 3.1.2.3. Understanding organizational goals 3.1.3. Demonstrate Intra and Interpersonal skills at work 3.1.4. Demonstrate personal commitment in work	• Group discussion • Lecture • Demonstration	• Oral evaluation • Written examination • Observation	2 hours
	3.2. Set and meet work priorities	3.2.1. Describe company policies, operations, procedures and standards 3.2.2. Read: 3.2.2.1. Time Management 3.2.2.2. Basic strategic planning concepts 3.2.2.3. Resource utilization and management 3.2.2.4. Apply managing goals and time 3.2.3. Practice: 3.2.3.1. economic use of resources and facilities 3.2.3.2. time management	• Group discussion • Lecture • Demonstration	• Oral evaluation • Written examination • Observation	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
	3.3. Maintain professional growth and development	3.3.1. Describe company recognition and incentives 3.3.2. Read: 3.3.2.1. Career development opportunities 3.3.2.2. Information on relevant licenses and or certifications personal career development needs 3.3.3. Identify career opportunities 3.3.4. Determine personal career development needs	• Group discussion • Lecture	• Oral evaluation • Written examination	2 hours
4. Practice occupational health and safety	4.1. Identify hazard and risks	4.1.1. Describe OHS procedures, practices and regulations 4.1.2. Read 4.1.2.1. OHS indicators 4.1.2.2. Organizational contingency practices 4.1.3. Practice hazards/risks identification and control	• Group discussion • Lecture	• Oral evaluation • Written examination	2 hours
	4.2. Evaluate hazard and risks	4.2.1. Describe effects of safety hazards 4.2.1.1. Read Threshold Limit Value –TLV 4.2.2. Practice reporting safety hazards 4.2.3. Demonstrate evaluating hazards and risks using communication equipment	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation •	2 hours
	4.3. Control hazards and risks	4.3.1. Describe: 4.3.1.1. Organization safety and health protocol 4.3.1.2. Company emergency procedure practices 4.3.2. Practice personal hygiene 4.3.3. Practice drills on responding to emergency	• Group discussion • Demonstration • Simulation	• Oral evaluation • Observation	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
	4.4. Maintain occupational health and safety awareness	4.4.1. Identify emergency-related drills information 4.4.2. Practice occupational safety and health standards on personal records in the workplace 4.4.3. Practice emergency related drills in the workplace	• Lecture • Role play • Demonstration • Simulation	• Written examination • Observation	2 hours
5. Address general workplace problems	5.1. Identify routine problems	5.1.1. Lecture and discussion on: 5.1.1.1. Possible routine problems or procedural problem areas 5.1.1.2. Current industry hardware and software products and services 5.1.1.3. Malfunctions and resolutions	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	2 hours
	5.2. Look for solutions to routine problems	5.2.1. Lecture and discussion on: 5.2.1.1. Industry service and helpdesk practices, processes and procedures 5.2.1.2. Operating systems 5.2.1.3. Industry standard diagnostic tools 5.2.1.4. Root cause analysis 5.2.2. Identification of potential solutions to problem	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	2 hours
	5.3. Recommend solutions to problems	5.3.1. Lecture and discussion on: 5.3.1.1. Standard/Established procedures 5.3.1.2. Implementation of solutions 5.3.1.3. Evaluation of implemented solutions 5.3.2. Produce documentation that recommends solutions to identified problems	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	4 hours
6. Exercise sustainable development in the workplace	6.1. Identify current resource use	6.1.1. Lecture and discussion on: 6.1.1.1. Types of resources 6.1.1.2. Techniques in measuring current usage of resources 6.1.1.3. Calculating current usage of resources	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		6.1.1.4. Data recording and storage 6.1.1.5. Workplace resource efficiency issues			
	6.2. Comply with environmental regulations	6.2.1. Lecture and discussion on: 6.2.1.1. Types of workplace environment hazards 6.2.1.2. Workplace environmental efficiency issues 6.2.1.3. Environmental regulations 6.2.1.4. Methods of meeting efficiency targets 6.2.2. Identification of workplace environmental hazards and environmental regulations	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	2 hours
	6.3. Seek opportunities to improve resource efficiency	6.3.1. Lecture and discussion on: 6.3.1.1. Enterprise plans for improvement of environmental practices and resource efficiency 6.3.1.2. Sustainable practices 6.3.1.3. Impact of sustainable practices on work requirements and efficiency 6.3.2. Preparation of environmental plan	• Group discussion • Lecture • Role play • Demonstration	• Oral evaluation • Written examination • Observation	4 hours

COMMON COMPETENCIES
(60 hours)

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
1. Apply Quality Standards	1.1. Assess quality of received materials	1.1.1. Identify relevant production processes, materials and products 1.1.2. Study and interpret characteristics of materials, software and hardware used in production processes 1.1.3. Perform quality checking procedures 1.1.4. Apply quality Workplace procedures 1.1.5. Identify faulty materials 1.1.6. Check quality of materials or component parts as per manufacturer's standards 1.1.7. Interpret specifications or symbols	• Lecture • Field trip • Symposium • Video clips • Simulation/ Role playing	• Written test • Demonstration & questioning • Observation & questioning	2 hours
	1.2. Assess own work	1.2.1. Perform workplace procedure in documenting completed work 1.2.2. Perform fault identification and reporting 1.2.3. Observe safety and environmental aspects of production processes 1.2.4. Utilize workplace quality indicators 1.2.5. Document and report deviations from specified quality standards	• Field trip • Symposium • Simulation • On the job training	• Demonstration & questioning • Observation & questioning	2 hours
	1.3. Engage in quality improvement	1.3.1. Participate in quality improvement processes 1.3.1.1. IEC/ISO standards 1.3.1.2. Environmental and safety standards 1.3.2. Carry out work as per process improvement procedures 1.3.3. Monitor operation performance 1.3.4. Implement continuous improvement	• Field trip • Symposium • Simulation • On the job training	• Demonstration & questioning • Observation & questioning	8 hours
2. Comply with environmental protection procedures	2.1. Access information concerning environmental protection regulations and	2.1.1. Lecture on relevant environmental protection regulations & codes of practice 2.1.2. Lecture/Discussion on environmental risks associated with workplace operations and related precautions to control the risk 2.1.3. Lecture/Discussion on environmental protection	• Lecture • Discussion • Demonstration • Viewing multimedia	• Observation in workplace • Demonstration • Oral questioning • Third Party	4 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
	procedures	standards required in the workplace 2.1.4. Lecture on workplace reporting and recording processes and procedures 2.1.5. Accessing information and data 2.1.6. Identifying potential environmental risks and ways of minimizing them	• Hands on practice	Report	
	2.2. Implement and monitor procedures concerning environmental hazards	2.2.1. Applying environmental protection regulations & codes of practice concerning environmental hazards 2.2.2. Lecture/Discussion on workplace procedures and guidelines for implementing and monitoring procedures concerning environmental hazards 2.2.3. Lecture/Discussion on workplace environmental hazards and related hazard control measures 2.2.4. Using equipment and resources required when implementing and monitoring environmental protection procedures 2.2.5. Lecture/Discussion on Organizational structure and site layout 2.2.6. Reporting and recording processes and procedures 2.2.7. Application of problem solving techniques 2.2.8. Identifying potential environmental hazards and ways on minimizing them 2.2.9. identifying and correctly using equipment and vehicles in accordance with environmental protection regulations and guidelines	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning • Third Party Report	4 hours
	2.3. Implement and monitor environmental control procedures	2.3.1. Applying relevant environmental protection regulations & codes of practice for environmental control procedures 2.3.2. Lecture/Discussion on workplace procedures and guidelines for implementing and monitoring environmental control procedures 2.3.3. Using equipment and resources required when implementing and monitoring environmental	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	4 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
		control procedures 2.3.4. Carry out workplace reporting and recording processes and procedures 2.3.5. Application of problem solving techniques 2.3.6. counsel, advise and inform others on environmental control procedures 2.3.7. identifying and correctly using equipment and vehicles in accordance with environmental control procedures, regulations and guidelines			
3. Observe procedures, Specifications and Manuals of Instructions	3.1. Identify and access specification/ manuals	3.1.1. Familiarization on types of manuals used in distribution lines 3.1.2. Identification of symbols used in the manuals 3.1.3. Discussion on manuals and specifications 3.1.4. Accessing information and data	• Lecture-demonstration	• Oral questioning • Written test or examination	2 Hours
	3.2. Interpret manuals	3.2.1. Interpretation of symbols used in manuals 3.2.2. Lecture and discussion on system of measurements 3.2.3. Lecture on Unit conversion 3.2.4. Accessing information and data	• Actual demonstration • Group discussion	• Direct observation • • Written test or examination	2 Hours
	3.3. Apply information in manual	3.3.1. Application of symbols in manuals 3.3.2. Applying conversion of units of measurements 3.3.3. Applying information from manuals	• Demonstration • Group discussion	• Demonstration (able to impart knowledge and skills) • Practical and oral exam	2 Hours
	3.4. Store Manual	3.4.1. Manual storing and maintaining procedures 3.4.2. Storing and maintaining manuals	• Demonstration • Group discussion	• Demonstration • Practical and oral exam	2 Hours
4. Maintain and operate line tools and equipment	4.1. Plan and prepare for work to operate and maintain tools and equipment	4.1.1. Acquire sample work instruction 4.1.2. Interpret sample work instruction 4.1.3. Identify necessary and appropriate occupational health and safety requirements based on job specification 4.1.4. Identify relevant electric distribution line tools, equipment and hardware based on job	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning • Third Party Report	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
		specifications			
	4.2. Prepare hardware, tools and equipment for operation and maintenance	4.2.1. Enumerate the personal protective equipment in preparing line tools, hardware and equipment as per job requirements 4.2.2. Procedures in acquiring distribution line tools, equipment and hardware 4.2.3. Perform functionality test of electric distribution hot line tools as per manufacturers standards	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	2 hours
	4.3. Operate line tools and equipment	4.3.1. Enumerate the personal protective equipment in operating line tools, hardware and equipment as per job requirements 4.3.2. Discuss procedures in proper handling and application of line tools and equipment based on job assignments 4.3.3. Discuss special features and function of identified line tools and equipment	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	4 hours
	4.4. Check condition of line tools and equipment	4.4.1. Discuss and classify line tools and equipment based on different usage and requirements 4.4.2. Study proper segregation of functional and non-functional line tools and equipment 4.4.3. Analyze different safety procedures in handling tools and equipment as per manufacturer's instructions 4.4.4. Examine condition of personal protective equipment and tools	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	2 hours
	4.5. Perform basic preventive maintenance	4.5.1. Identify appropriate and different types of lubricants for different type and condition of equipment. 4.5.2. Review lubrication procedures in every preventive maintenance 4.5.3. Explain and perform testing and cleaning of electric distribution line tools and equipment 4.5.4. Practice inspection of working and non-working tools and equipment 4.5.5. Perform repair and replacement of components	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	4 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
		and parts for damage and non-working equipment 4.5.6. Discuss good housekeeping after preventive maintenance procedure			
	4.6. Store tools and equipment	4.6.1. Discuss proper inventory and auditing of tools and equipment as per company procedure 4.6.2. Describe and determine different storage places for different tools and equipment 4.6.3. Identify conditions, weather and surroundings appropriate and not appropriate for storage of tools and equipment 4.6.4. Create checklist for inventory and auditing of line tools and equipment	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on practice	• Observation in workplace • Demonstration • Oral questioning	2 hours
5. Perform Computer Operations	5.1. Plan and prepare for task to be undertaken	5.1.1. Plan and prepare computer operation activity 5.1.2. Determine task requirements based on required output 5.1.3. Determine appropriate hardware and software 5.1.4. Identify/Select types of computers and basic features of different operating systems 5.1.5. Interpret and follow client-specific guidelines & procedures 5.1.6. Plan task as per data security guidelines	• Lecture • Modular • Computer based training (e-learning) • Project method • On the job training	• Written/Oral examination • Practical demonstration	2 hours
	5.2. Input data into computer	5.2.1. Apply basic ergonomics of keyboard and computer user 5.2.2. Enter/Encode data using appropriate computer programs/applications 5.2.3. Check accuracy of encoded data/information per SOP 5.2.4. Save and store inputted data in storage media 5.2.5. Storage devices and basic categories of memory 5.2.6. Identify and define relevant types of software	• Lecture • Modular • Group discussion • Project method • On the job training	• Written/Oral examination • Practical demonstration	2 hour
	5.3. Access information using computer	5.3.1. Select correct program/ application based on job requirements 5.3.2. Access computer data/files	• Lecture • Computer based training (e-	• Written/Oral examination • Practical	2 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
		5.3.3. Interpret general security, privacy legislation & copyright 5.3.4. Use Productivity Application 5.3.4.1. Microsoft office applications 5.3.5. Learn Business Application 5.3.5.1. Introduction to Basic Programming software 5.3.6. Apply basic ergonomics of keyboard and computer user	learning) • On the job training	demonstration	
	5.4. Produce/output data using computer system	5.4.1. Identify types and function of computer peripheral devices 5.4.2. Print and scan office documents and materials 5.4.3. Send office/ business documents through facsimile 5.4.4. Transfer files or data between compatible systems using computer software, hardware/ peripheral devices 5.4.5. Save documents in storage devices 5.4.5.1. CD/DVD 5.4.5.2. USB drives 5.4.5.3. Hard disk drives	• Lecture • Group discussion • Modular • On the job training	• Written/Oral examination • Practical demonstration	2 hour
	5.5. Maintain computer equipment and systems	5.5.1. Perform computer equipment/ system basic maintenance procedures 5.5.1.1. Perform basic file maintenance procedures 5.5.1.2. Perform cleaning of PC parts/ hardware components 5.5.1.3. Scan/Debug computer software and applications 5.5.1.4. Perform cleaning and defragmentation of computer files 5.5.1.5. Perform backup of computer files 5.5.2. Enumerate and define different types of computer viruses	• Demonstration • Simulation • Modular • Video clips • Computer based training (e-learning)	• Written/Oral examination • Practical demonstration	4 hours

CORE COMPETENCIES
(236 hours)
(180 hours) + 56 hours (7 days Supervised-Industry Training / Practicum)

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
1. Erect electric distribution pole	1.1. Plan and prepare for work	1.1.1. Lecture and discussion on Occupational Health and Safety Requirements on electric distribution pole erection (2 Hours) 1.1.2. Discussion on construction specification standard and staking sheets (1 hour) 1.1.3. Discussion on appropriate tools, equipment and materials (1 hour) 1.1.4. Lecture on length and angular units of measurement (1 hour)	• Lecture • Discussion • Viewing multimedia	• Oral questioning • Written exam	7 hours
	1.2. Perform pole loading, hauling and spotting	1.2.1. Discussion and actual performance on different types of knot tying 1.2.2. Actual demonstration on proper pole handling 1.2.3. Lecture and discussion on Occupational Health and Safety Requirements on pole handling	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on Practice	• Practical demonstration • Oral questioning • Oral interview	3 hours
	1.3. Perform pole hole digging, grounding and setting/erection	1.3.1. Lecture and discussion on Occupational Health and Safety Requirements on pole hole digging and pole erection 1.3.2. Identification and tools and equipment for pole hole digging, grounding and setting/erection 1.3.3. Actual demonstration of different pole erection methods 1.3.4. Lecture and discussion on different types and classes of poles 1.3.5. Lecture and demonstration on appropriate construction specification standards	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	12 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
	1.4. Clear right of way	1.4.1. Lecture on appropriate clearance specification standards 1.4.2. Lecture and discussion on Occupational Health and Safety Requirements on clearing right of way. 1.4.3. Discussion and demonstration on proper handling of pruning equipment	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	3 hours
2. Climb Pole and install pole assembly and conductors	2.1. Plan and prepare for work	2.1.1. Lecture and discussion on Occupational Health and Safety Requirements on electric distribution pole climbing. 2.1.2. Discussion on construction specification standard and staking sheets 2.1.3. Discussion on appropriate tools, equipment and materials 2.1.4. Lecture on pole top assembly techniques and procedures.	• Lecture • Discussion • Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	15 hours
	2.2. Climb and dress/frame pole	2.2.1. Lecture on pole climbing tools and equipment 2.2.2. Actual demonstration and practice on proper pole climbing techniques and procedures.	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on Practice	• Practical demonstration • Oral questioning • Written exam	35 hours
		2.2.3. Discussion and actual demonstration on different types of knot tying 2.2.4. Actual demonstration on proper pole top dressing techniques and procedures 2.2.5. Lecture and discussion on Occupational Health and Safety Requirements on pole top dressing/assembly. 2.2.6. Lecture on construction specifications/assemblies and standards.	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on Practice	• Practical demonstration • Oral questioning • Written exam • Oral interview	24 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
	2.3. Install pole anchor and guy	2.3.1. Lecture and discussion on Occupational Health and Safety Requirements on pole anchoring and guying 2.3.2. Identification of tools and equipment for pole anchoring, and guying. 2.3.3. Actual demonstration on pole anchoring and guying. 2.3.4. Lecture and discussion on different types of pole anchor and guy assemblies. 2.3.5. Lecture and demonstration on appropriate construction specification standards.	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	19 hours
	2.4. Perform stringing and tensioning of conductor (primary/ secondary)	2.4.1. Lecture and discussion on Occupational Health and Safety Requirements on stringing and tensioning of conductor. 2.4.2. Lecture and discussion on the different methods and techniques for conductor stringing and tensioning. 2.4.3. Identification of tools and equipment for conductor stringing and tensioning of conductor. 2.4.4. Actual demonstration on conductor stringing and tensioning. (primary/secondary)	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning	20 hours
	2.5. Apply Conductor Armoring and Tying	2.5.1. Lecture and discussion on Occupational Health and Safety Requirements on conductor armoring and tying. 2.5.2. Identification of tools and equipment for conductor armoring and tying. 2.5.3. Actual demonstration of conductor armoring and tying.	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	9 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
	2.6. Perform line grounding	2.6.1. Lecture and discuss the different parts and application of grounding for multi-grounded system. 2.6.2. Actual demonstration on proper installation of grounding on wood, steel and concrete poles. 2.6.3. Identification of tools and equipment for grounding.	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	13 hours
3. Install single-phase distribution line equipment and devices	3.1. Plan and prepare for work	3.1.1. Lecture on types and operation of distribution transformer, cut-out and lightning arresters 3.1.2. Lecture and discussion on Occupational Health and Safety Requirements on installation of distribution transformer, cut-out and lightning arresters 3.1.3. Discussion on construction specification standard and staking sheet codes 3.1.4. Discussion on appropriate tools, equipment and materials	• Lecture • Discussion • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	4 hours
	3.2. Install single-phase line equipment and devices	3.2.1. Demonstration on how to install lifting devices 3.2.2. Demonstration on how to properly lift a single-phase transformer observing safety requirements 3.2.3. Actual demonstration on proper installation of single-phase transformer 3.2.4. Actual demonstration on proper installation of fuse cut-out and lightning arrester	• Lecture • Discussion • Demonstration • Viewing multimedia • Hands on Practice	• Practical demonstration • Oral questioning • Written exam • Oral interview	3 hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodologies	Assessment Methods	Nominal Duration
	3.3. Tap/Connect line equipment and devices to distribution line	3.3.1. Discussion on the proper connection of single-phase distribution transformers, installation of fuse cut-out and lightning arrester 3.3.2. Discussion on proper equipment grounding 3.3.3. Demonstration on how to energize and de-energize the distribution transformer	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	3 hour
4. Install single – phase consumer service connection facility	4.1. Plan and prepare for work	4.1.1. Lecture and discussion on Occupational Health and Safety Requirements on Install single –phase consumer service connection facility 4.1.2. Lecture on types of kWH meter, Service Drop and the operation. 4.1.3. Discussion on construction specification standard of kWH meter 4.1.4. Discussion on appropriate tools, equipment and materials	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	4 hrs
	4.2. Install Service Drop	4.2.1. Demonstration on how to install Service Drop 4.2.2. Lecture on appropriate clearance specification standards conformed with latest Philippine Electrical Code (PEC). 4.2.3. Discussion on Service connection accessories	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	3 hour
	4.3. Install KWH meter	4.3.1. Demonstration on how to install kWH meter socket type or bottom-connected in cluster metering. 4.3.2. Lecture on appropriate clearance specification standards conformed with latest Philippine Electrical Code (PEC).	• Lecture • Discussion • Actual Demonstration • Viewing multimedia	• Practical demonstration • Oral questioning • Written exam	3 hour
Supervised Industry Training (SIT)					56 hours

3.1 TRAINING DELIVERY

1. The delivery of training shall adhere to the design of the curriculum. Delivery shall be guided by the principles of competency-based TVET.
    a. Course design is based on competency standards set by the industry or recognized industry sector; (Learning system is driven by competencies written to industry standards)
    b. Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
    c. Training can be done on an actual workplace setting, simulation of a workplace and/or through adoption of modern technology.
    d. Assessment is based in the collection of evidence of the performance of work to the industry required standards;
    e. Assessment of competency takes the trainee's knowledge and attitude into account but requires evidence of actual performance of the competency as the primary source of evidence.
    f. Training program allows for recognition of prior learning (RPL) or current competencies;
    g. Training completion is based on satisfactory performance of all specified competencies.

2. The competency-based TVET system recognizes various types of delivery modes, both on-and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities and their variations/components may be adopted singly or in combination with other modalities when designing and delivering training programs:

2.1. Institution- Based:

- **Dual Training System (DTS)/Dualized Training Program (DTP)** which contain both in-school and in-industry training or fieldwork components. Details can be referred to the Implementing Rules and Regulations of the DTS Law and the TESDA Guidelines on the DTP;

- The **traditional classroom-based or in-center instruction** may be enhanced through use of learner-centered methods as well as laboratory or field-work components.

2.2 Enterprise-Based:

- **Formal Apprenticeship** – Training within employment involving a contract between an apprentice and an enterprise on an approved apprenticeable occupation.

- **Enterprise-based Training-** where training is implemented within the company in accordance with the requirements of the specific company. Specific guidelines on this mode shall be issued by the TESDA Secretariat.

3.2 TRAINEE ENTRY REQUIREMENTS

The trainees who wish to enter the course should possess the following requirements:

- Must have completed at least 10 yrs. basic education or an alternative learning systems (ALS) certificate of achievement with grade 10 equivalent holder
- Able to communicate both oral and/or written
- Must be physically and mentally fit to undergo training e.g. ***no fear of working in height***

This list does not include **specific institutional requirements**, such as height and age requirements, educational attainment, appropriate work experience and others that may be required from the trainees by the school or training center delivering the TVET program.

3.3 LIST OF TOOLS, EQUIPMENT AND MATERIALS (Institution-based)

Minimum list of tools, equipment and materials required for a group of **25 trainees** for ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II:

TOOLS			EQUIPMENT		
QTY	**UNIT**	**ITEM**	**QTY**	**UNIT**	**ITEM**
4	units	Ordinary shovel	8	sets	Pole climbing equipment
4	units	Spoon shovel, 7 ft	4	units	Hole digger 6' or 8'
4	units	Straight shovel, 7 ft.	2	units	Telescopic ladder
4	units	Digging/tamping bar, 8', forge steel	4	sets.	KWH meter, 1∅ 10 (30)A, bottom connection
8	units	Pole pike, assorted size	4	units	DX transformer, 10 KVA
4	sets	Pole Jenny (salagunting), 14 ft.	1	unit	Boom truck (with auger & man lift)
4	sets	Pole Jenny (salagunting), 18 ft.	1	unit	Line truck (only during actual line construction)
4	units	Butting board (1"x6"x7" wood or steel)	1	unit	Block and tackle, single, 5", 3/8" MSL 227 kg.
1	unit	Cant hook	1	unit	Double block, 5", 3/8", MSL 338 kg.
4	units	Bolt cutter, 24" or 36"	1	unit	Stringing roller & block, brass steel
4	units	Auger bit, ¾", 5/8" and 11/16"∅			**Personal Protective Equipment (PPE)**
4	units	Rachet, 1.5 tons	25	pcs	Class E Hard hat (full brim)
4	units	Cum-a-long (wire grip)	25	pairs	Safety spectacles
1	unit	Secondary rack (J2)	25	pairs	Working gloves
4	unit	Transformer gin	50	sets	Maong jacket, long sleeve
4	units of 25 meters	Bull line (3/4"∅polypropylene rope)	25	pcs	Full-body harness with big hook lanyard
4	units of 60 ft. length	Hand line (1/2"∅ rope)	25	sets	Rubber gloves
4	units	Crimping Tool of various sizes	25	pairs	Safety shoes, high cut with heels
4	units	Pruning saw of various sizes			
1	unit	Hotstick			
1	unit	Shotgun stick			
4	sets	Grounding cluster			

TOOLS			EQUIPMENT		
QTY	**UNIT**	**ITEM**	**QTY**	**UNIT**	**ITEM**
		HANDTOOLS			
25	pcs.	Linemen's pliers, 9", insulated handle			
25	pcs.	Adjustable wrench, 12"			
25	pcs.	Ball-peen hammer, 2 lbs; forge steel			
25	pcs.	Screw driver, 12", flat			
25	pcs.	Adjustable wrench, 12", forge steel			
25	pcs.	Skinning knife, 2 ¼", insulated			
25	pcs.	Canvas bag			

HARDWARE/ ACCESSORIES					
QTY	**UNIT**	**ITEM**	**QTY**	**UNIT**	**ITEM**
8	pcs.	Cross arm, wood or steel, 10 ft. or 8 ft.	10	pcs.	Spool insulator, 1 ¾"
30	pcs.	Pin insulator (ANSI 55-5)	10	pcs.	Spool insulator, 3"
30	pcs.	Steel pin (Short shank)	4	pcs.	Ground rod 5/8x8'
12	sets	Armor rod for # 1/0 AWG, ACSR	4	pcs.	Ground rod clamp
30	meters	# 1/0 AWG, ACSR	10	pcs.	Eye bolt 5/8x10"
100	pcs.	Strand of # 1/0 ACSR two (2) meters length	20	pcs.	Eye bolt 5/8x12"
2	pcs.	Pole, wood (tanalized), 40 ft.	8	pcs.	Dead end loop clamp for 1/0 ACSR
2	pcs.	Pole, wood (tanalized), 35 ft.	80	meters	Conductor ACSR, #1/0
2	pcs.	Pole, wood (tanalized), 30 ft.	20	meters	Conductor ACSR, #4/0
1	pc.	Pole, wood (tanalized), 25 ft.	40	meters	Conductor ACSR, #2
38	pcs.	Suspension insulator 6"	60	meters	Guy wire, 3/8"∅
18	pcs.	Dead end strain clamp, 1/0 ACSR	4	pcs.	Machine bolt, 5/8"x12
10	pcs.	Pole top pin 20"	2	pcs.	V-brace, 60" span
18	pcs.	Double arming bolt 5/8 x 22"	4	pcs.	Machine bolt, ½ x 6"
18	pcs.	Eye nut, oval 5/8"	20	meters	Ground wire, 3 strand
4	pcs.	Single upset bolt 5/8x10"	40	pcs.	Staple wire
4	pcs.	Double upset bolt 5/8x10"	60	pcs.	Washer square, 1 3/16" hole, 2 ¼ x 2 ¼ x 3/16
8	pcs.	Pipe spacer 5/8"∅	60	pcs.	Lock nut 5/8"
18	pcs.	Steel brace, 28"	4	pcs.	Lock nut ½"
18	pcs.	Lag screw	6	pcs.	Square washer 4"x4"
4	pcs.	Malleable guy attachment	8	pcs.	Anchor shackle
4	pcs.	Guy hook	60	meters	Duplex Wire, #6
4	pcs.	Guy plate	4	pcs.	Service Grip, secondary
10	pcs.	Three bolt clamp	24	meters	Insulated copper, #2 connector
4	pcs.	Guy grip, 3/8∅guy wire	4	pcs.	Fuse cut-out with lighting arrester combination
4	pcs.	Dead-end strain clamp, 4/0"	12	pcs.	Compression connector, #1/0 - #2 ACSR
6	pcs.	Anchor log, 4 ft.	8	pcs.	Compression connector, #1/0 - #6 ACSR
4	pcs.	Anchor expanding	4	pcs.	Hot line clamp for 1/0 ACSR
2	pcs.	Anchor rod 5/8"∅, Twin eye			
2	pcs.	Anchor rod 5/8"∅, Single eye			

3.4 TRAINING FACILITIES

Recommended space requirements for the various teaching/learning areas are as follows:

TEACHING/LEARNING AREAS	SIZE IN METERS (M)	AREA IN SQ. M	QTY	TOTAL AREA IN SQ. M
Lecture Area	6 x 8	48	1	48
Training Area (***Field-based***)	20 X 40	800	1	800
Learning Resource Area	4 x 5	20	1	20
Tool Room / Storage Area	4 x 5	20	1	20
Wash ,Toilet & Locker Room	3 x 5	15	1	15
Total				903
Facilities / Equipment / Circulation*				271
Total Area				**1,174**

***** Area requirement is equivalent to 30% of the total teaching/learning areas***

3.5 TRAINERS QUALIFICATIONS

- Must be a holder of National TVET Trainer Certificate (NTTC) level I in Electric Power Distribution Line Construction NCII
- Must have at least three (3) years supervisory experience in distribution line works within the last 10 years, e.g. Line Supervisor/Lead Lineworker
- Must have completed the Basic Occupational Safety and Health (BOSH) Course and/or related Electrical Safety Training conducted by OSHC and DOLE accredited Safety Training Organizations
- Must be physically fit

3.6 INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

The result of the institutional assessment may be considered as evidence for the assessment for national certification.

SECTION 4: ASSESSMENT AND CERTIFICATION ARRANGEMENTS

Competency Assessment is the process of collecting evidence and making judgments whether competency has been achieved. The purpose of assessment is to confirm that an individual can perform to the standards expected at the workplace as expressed in relevant competency standards.

The assessment process is based on evidence or information gathered to prove achievement of competencies. The process may be applied to an employable unit(s) of competency in partial fulfillment of the requirements of the national qualification.

4.1 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1.1 The National Qualification of **ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II** shall be obtained when a candidate demonstrate competence in all units of competency listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.

4.1.2 The Qualification of Electric Power Distribution Line Construction NC II can be attained by demonstration of competence through project-type assessment covering all the units required.

4.1.3 Assessment shall cover all competencies with basic and common integrated or assessed concurrently with the core units of competency.

4.1.4 Any of the following are qualified to apply for assessment and certification:

4.1.4.1 Graduate of formal or non-formal training in distribution line installation/construction and maintenance or related course;

4.1.4.2 Worker with at least 1-year relevant experience in distribution line installation/construction and maintenance, within the last 5 years.

The candidate must provide evidence that he/she is physically fit through a medical certificate issued within the last six (6) months prior to assessment.

4.1.5 The existing NCs in Electric Power Distribution Line Construction NC II shall be in effect until the said NCs have expired. The NCs in this qualification maybe renewed under this amended/updated TR if the NC holders present evidence that they are currently or have been employed in electric power distribution line works for at least two (2) years within the last five (5) years.

4.1.6 The guidelines on assessment and certification are discussed in detail in the "Procedures Manual on Assessment and Certification" and "Guidelines on the Implementation of the Philippine TVET Competency Assessment and Certification System (PTCACS)".

4.2 COMPETENCY ASSESSMENT REQUISITE

4.2.1 **Self-Assessment Guide**. The self-assessment guide (SAG) is accomplished by the candidate prior to actual competency assessment. SAG is a pre-assessment tool to help the candidate and the assessor determine what evidence is available, where gaps exist, including readiness for assessment.

This document can:

a. Identify the candidate's skills and knowledge
b. Highlight gaps in candidate's skills and knowledge
c. Provide critical guidance to the assessor and candidate on the evidence that need to be presented
d. Assist the candidate to identify key areas in which practice is needed or additional information or skills that should be gained prior `

4.2.2 Accredited Assessment Center. Only Assessment Center accredited by TESDA is authorized to conduct competency assessment. Assessment centers undergo a quality assured procedure for accreditation before they are authorized by TESDA to manage the assessment for National Certification.

4.2.3 Accredited Competency Assessor. Only accredited competency assessor is authorized to conduct assessment of competence. Competency assessors undergo a quality assured system of accreditation procedure before they are authorized by TESDA to assess the competencies of candidates for National Certification.

DEFINITION OF TERMS

GENERAL

1) **Certification -** is the process of verifying and validating the competencies of a person through assessment

2) **Certificate of Competency (COC)** – is a certification issued to individuals who pass the assessment for a single unit or cluster of units of competency

3) **Common Competencies** - are the skills and knowledge needed by all people working in a particular industry

4) **Competency** - is the possession and application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace

5) **Competency Assessment -** is the process of collecting evidence and making judgments on whether competency has been achieved

6) **Competency Standard (CS)** - is the industry-determined specification of competencies required for effective work performance

7) **Context of Assessment** - refers to the place where assessment is to be conducted or carried out

8) **Core Competencies** - are the specific skills and knowledge needed in a particular area of work - industry sector/occupation/job role

9) **Critical aspects of competency** - refers to the evidence that is essential for successful performance of the unit of competency

10) **Elective Competencies** - are the additional skills and knowledge required by the individual or enterprise for work

11) **Elements** - are the building blocks of a unit of competency. They describe in outcome terms the functions that a person performs in the workplace.

12) **Evidence Guide** - is a component of the unit of competency that defines or identifies the evidences required to determine the competence of the individual. It provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, assessment method and context of assessment

13) **Level -** refers to the category of skills and knowledge required to do a job

14) **Method of Assessment** - refers to the ways of collecting evidence and when, evidence should be collected

15) **National Certificate (NC)** – is a certification issued to individuals who achieve all the required units of competency for a national qualification defined under the Training Regulations. NCs are aligned to specific levels within the PTQF

16) **Performance Criteria** - are evaluative statements that specify what is to be assessed and the required level of performance

17) **Qualification** - is a cluster of units of competencies that meets job roles and is significant in the workplace. It is also a certification awarded to a person on successful completion of a course in recognition of having demonstrated competencies in an industry sector

18) **Range of Variables** - describes the circumstances or context in which the work is to be performed

19) **Recognition of Prior Learning (RPL)** – is the acknowledgement of an individual's skills, knowledge and attitudes gained from life and work experiences outside registered training programs

20) **Resource Implications -** refers to the resources needed for the successful performance of the work activity described in the unit of competency. It includes work environment and conditions, materials, tools and equipment

21) **Basic Competencies -** are the skills and knowledge that everyone needs for work

22) **Training Regulations (TR)** – refers to the document promulgated and issued by TESDA consisting of competency standards, national qualifications and training guidelines for specific sectors/occupations. The TR serves as basis for establishment of qualification and certification under the PTQF. It also serves as guide for development of competency-based curricula and instructional materials including registration of TVET programs offered by TVET providers

23) **Underpinning Knowledge -** refers to the competency that involves in applying knowledge to perform work activities. It includes specific knowledge that is essential to the performance of the competency

24) **Underpinning Skills** - refers to the list of the skills needed to achieve the elements and performance criteria in the unit of competency. It includes generic and industry specific skills

25) **Unit of Competency** – is a component of the competency standards stating a specific key function or role in a particular job or occupation; it is the smallest component of achievement that can be assessed and certified under the PTQF

SPECIFIC

1. **Anchor** - A device that supports and holds in place conductors when they are terminated at a pole or structure. The anchor is buried and attached to the pole by way of guy wire to counteract the mechanical forces of these conductors.

2. **Armor** - An outer metal layer applied to a cable for mechanical protection. Armor is comprised of factory formed wire, designed to be applied to a range of conductor sizes.

3. **Armor Rod** - An outer metal layer applied to a cable for mechanical protection. Armor Rods are comprised of factory formed wire, designed to be applied to a range of conductor sizes.

4. **Baker Board** - A platform used to work above the ground on a wood pole.

5. **Block and tackle** - an apparatus of pulley blocks and ropes or cables used for hauling and hoisting heavy objects.

6. **Cable** - A term generally applied to the larger sizes of bare or weatherproofed (covered) and insulated conductors. It is also applied to describe a number of insulated conductors twisted or grouped together.

7. **Cable Pulling Lubricant** - A chemical compound used to reduce pulling tension by lubricating a cable when pulled into a duct or conduit.

8. **Climbers** - Hooks for climbing poles that are attached to a line worker's boots.

9. **Cum-a-long** - A wire grip for holding a conductor or strand under tension.

10. **Conductor** - 1) a wire or combination of wires suitable for carrying an electrical current. Conductors may be insulated or bare. 2) any material that allows electrons to flow through it.

11. **Connector** - A conductive coupling device used to connect conductors together.

12. **Cross-arm -** A wooden/steel support attached to a pole that holds wire and insulators.

13. **Cut-out -** A transformer fuse so named because when the fuse is removed the circuit opens.

14. **Digger**-**derrick -** A type electric utility line truck that digs holes and sets poles.

15. **Distribution System** - A term used to describe that part of an electric power system that distributes the electricity to consumers from a bulk power location such as a substation. It includes distribution line, line equipment and power substation.

16. **Distribution Transformer** - A line equipment that reduces voltage from the supply lines for direct connection to operate consumer devices.

17. **Distribution Voltage** - A nominal operating voltage below 69 kV.

18. **Double Arming Bolt** - A special long bolt used to assemble two cross arms, one on each side of the pole.

19. **Electrical Hazard** - A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.

20. **Electric meter** or **energy meter** is a device that measures the amount of electrical energy consumed by a residence, business, or an electrically-powered device. Electric meters are typically calibrated in billing units, the most common one being the kilowatt hour.

21. **Electrical Safety** - Recognizing hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death.

22. **Electrically Safe Work Condition** - A state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

23. **Grip All Stick** - See Shotgun Stick.

24. **Groundman** - a person working at ground level in support of a line worker working above.

25. **Guy** - a rope, cord, or wire used to steady, guide, or secure something.

26. **Guy-wire** or **guy-rope** is a tensioned cable designed to add stability to structures (frequently ship masts, radio masts, wind turbines, utility poles, and tents). One end of the cable is attached to the structure, and the other is anchored to the ground at a distance from the structure's base. This allows the tension of each guy-wire to offset the others.

27. **Hotstick** - An insulated stick usually made of fiberglass that is used to work energized overhead conductors and operate electrical equipment that is overhead, underground and pad mounted.

28. **Insulator** - a device that is used to electrically isolate a conductor or electrical device from ground or a different electrical potential. Insulators are broadly classified as either pin-type, which support the conductor above the structure, or suspension type, where the conductor hangs below the structure. Insulators are usually made of wet-process porcelain or toughened glass, with increasing use of glass-reinforced polymer insulators.

29. **Jumper** - An electrical connection between two points.

30. **Kilowatt** - 1000 watts of real power. Expressed at kW.

31. **Kilowatt Hour** - The use of one thousand watts for one hour.

32. **Line** - refers to the conductor in an overhead or underground distribution or distribution line.

33. **Line worker** - a person whose duties include climbing wood poles or steel structures to perform work on electric power distribution line construction.

34. **Personal Protective Equipment (PPE)** - The term shall include, but is not limited to, devices designed to be worn by workers for eye, face, head, respiratory, hand, arm, body, leg, foot, and fall protection.

35. **Pole pike** - a device with a sharp metal point in one end that is used to hold utility poles upright while they are being erected.

36. **Right-of-way -** A strip of land owned by another party on which a utility places poles, wires, substations, and other facilities.

37. **Service Drop** - an electrical line running from a utility pole to a customer's building or other premises. It is the point where electric utilities provide power to their customers.

38. **Service Entrance Cable** - The conductors that connect the service conductors (drop or lateral) to the service equipment of the building.

39. **Shotgun Stick** - A specialized hot stick that allows the capture of certain types of clamps and devices in its hook. It is also called a "Grip All" stick.

40. **Stringing** - The act of installing overhead electrical wire or conductor.

41. **Tag Line** - A rope used to control the position of equipment being lifted. This is not to be confused with the rope used to actually lift the equipment.

42. **Tension** - The force in pounds of kilograms on a conductor installed overhead. Too much tension on an overhead line can contribute to mechanical failure.

ANNEX A

UTILITIES SECTOR COMPETENCY MAP

ELECTRIC POWER DISTRIBUTION LINE CONSTRUCTION NC II

BASIC COMPETENCIES

Receive and Respond to Workplace Communication	Work with Others	Demonstrate work values	Practice basic housekeeping procedures	**Participate in Workplace Communication**	**Work in a Team Environment**	**Practice career professionalism**
Practice occupational health and safety procedures	Lead Workplace Communication	Lead Small Working Teams	Develop and Practice Negotiating Skills With Team Members	Guide Effective Solutions to Problems Arising from Work Activities	Check and Develop the Use of Mathematical Concepts & Techniques	Use Relevant Technologies Applicable to Assigned Work
Lead in Utilizing Specialized Communication Skills	Assist in Developing Team and Individuals	Apply Problem Solving Techniques in the Workplace	Collect, analyze and organize information	Plan and Organize Work for Several Working Teams	Promote Environmental Protection	

COMMON COMPETENCIES

Apply quality standards	**Comply with environmental protection procedures**	**Observe procedures, specifications and manual of instruction**	**Operate and maintain tools and equipment**	Operate a personal computer

CORE COMPETENCIES

Tender Diesel Engine	Operate Diesel Power plant	Maintain and Repair Diesel Engine Systems and Alternator	Service Alternator/ Generator	Diagnose and Repair Diesel Engine	Diagnose and Repair Electrical System	Overhaul Diesel Engine
Perform transmission line pole erection	Perform overhead transmission line work	Perform cold-line maintenance work	Perform live-line maintenance work	Perform ground line maintenance work	Plan transmission line maintenance job	Install emergency restoration structure (ERS)
Inspect/Assess transmission line components' conditions	Implement transmission line maintenance works	Inspect transmission line, poles, towers and appurtenances	Erect distribution line poles	Climb pole and install pole assembly/conductors	Install distribution line equipment and devices	Install consumer service connection facility
Conduct initial root cause analysis	Perform ground transmission line works	Perform overhead maintenance works	Install/construct new transmission line structures	Perform overhead transmission line works	Install emergency restoration structure (ERS)	Perform earth ground resistance testing
Plan assigned maintenance work	Supervise transmission line maintenance work	**Erect electric distribution pole**	**Install single-phase distribution line equipment and devices**	**Climb pole and install pole top assembly and conductors**	**Install single-phase consumer service connection facility**	Replace electric distribution pole, pole top assembly and conductors
Install/Replace three-phase distribution line equipment and devices	Install/Replace three-phase consumer service connection facility	Conduct vegetation clearing along distribution system	Perform onsite assessment and testing of installed electric distribution line equipment and devices	Troubleshoot faults and implement solution on electric power distribution system	Supervise operation and maintenance on electric power distribution system	

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