

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician				SAQA ID: 91761	
Learning Area 8: Install power supply (Service entrance) and associated equipment to buildings and premises				Total Hours:	88
Learning Project 4: Service and maintain power supply switch and control gear (power on and off) and metering systems (incl. KWh meters and smart meters, PTs and CTs)				Total Hours:	8
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none"> LA 8, LP1-3 			
Learning project description: Apprentices understand to service and maintain power supply switch and control gear (power on and off) and metering systems (incl. KWh meters and smart meters, PTs and CTs)					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-01-PS03, PM02-PS02+03, PM-06-PS02, PM07-PS01+02	KM-01-KT01, KM02-KT02	WM-01-WE02, WM-03-WE01, WM-04-WE01, WM05-WE01-03		
Planning/Preparation	<p><u>Provide access to (Given):</u> Existing live distribution board, which is fully wired with switch and control gear, a maintenance scenario/schedule, materials and equipment as identified in last column;</p> <p><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></p> <ul style="list-style-type: none"> Read and interpret the maintenance schedule and data sheets of applicable switch and control gear Read and interpret electrical diagram Perform a risk assessment on the task and obtain an authorisation permit Identify the tools and materials required Plan sequence of tasks 	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> Interpretation of maintenance schedules Lockout procedures and electrical safety Statutory requirements as per work conducted Common maintenance tasks and procedures Specialised measuring instruments 	<p><u>Under supervision:</u></p> <ul style="list-style-type: none"> Service and maintain power supply switch and control gear (power off and on) and metering systems (incl. KWh meters and smart meters, PTs and CTs) (in a variety of contexts) 	Lecture, presentations DVDs, audio-visual Demonstrations Practical applications	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> Training manuals for trainers and apprentices incl. multimedia software Set of presentation aids (videos, slides) for overhead or LED/LCD projectors Statutory requirements: SANS 10142-Part1 Municipal by-laws <p>Tools, equipment and materials incl.: Range of materials and tools to be covered (minimum):</p> <ul style="list-style-type: none"> Vacuum cleaner Paintbrush Infrared scanner Electrical measuring instruments Electrical hand tools standard

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Implementation / Execution Repair	<ul style="list-style-type: none"> • Transport materials and tools safely to site • Adhere to lock out procedure • Cordon off work area according to statutory requirements. Danger Tape; Marker Poles; Cones; Hazard Light • Follow maintenance procedure (incl. infrared scanning) • Identify faulty components and replace where applicable • Perform (power off) test • Perform (power on) test • Leave panel in operating condition 			<ul style="list-style-type: none"> • toolbox • Associated Powertools <p>Materials:</p> <ul style="list-style-type: none"> • Wired up DB Board with switch and controlgear • <u>Replacement spares:</u> <ul style="list-style-type: none"> • Lugs • Cable ties • Heat shrinks • Insulation tape of different colours • Conductors • Cables • Slotted trunking • Metering instruments (kW meter, smart meter, voltmeter, ammeter) • Labelling • Blanking plates <p>PPE:</p> <ul style="list-style-type: none"> • Hard hat • Safety boots • Gloves • Safety glasses
Evaluation/ Documentation	<ul style="list-style-type: none"> • Clean work area after completion of task in accordance with work site procedures and housekeeping standards • Dispose of waste materials in accordance with safety standards and environmental requirements • Complete maintenance documentation and submit to designated personnel. 			
Total	Hours: 8			
Specialisation additions				
Assessment guidance				
<ul style="list-style-type: none"> • Self assessment • Group assessment • Theory test <p>Criteria for assessment:</p> <ul style="list-style-type: none"> • Planning for task • Interpretation of maintenance schedule and electrical diagram • Identification of risks • Lockout procedures adhered to • Correct selection of any equipment that requires replacing • Use of appropriate equipment and tools 				

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- Testing conducted as per requirements
- Panel functioning correctly
- Clean worksite after completion of task and equipment returned safely to store
- All maintenance documentation completed correctly

Work in progress