

MICRO HYDRO POWER PLANT TECHNOLOGY

Assessment Package

National Vocational
Certificate Level 2

Version 1 - July 2015



EUROPEAN UNION



Kingdom of the Netherlands



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Document Version

July, 2015

Islamabad, Pakistan

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ASSESSMENT MATERIAL	<h1>APPLY MICRO HYDRO POWER (ASSISTANT) SKILLS FOR MHP PLANT</h1>																				
EVIDENCE GUIDE																					
Qualification code: LEN0272.v1 Level: 2 Credit: 128 Version:1																					
CONTENTS	<ol style="list-style-type: none">1. Assessment Summary and Record2. Candidate Assessment3. Assessor Judgement Guide4. List of required tools/equipment, material and context of assessment																				
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1

ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	PORTFOLIO	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: APPLY MICRO HYDEL POWER (ASSISTANT) SKILLS FOR MHP PLANT	COMPETENT	NOT YET COMPETENT
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Perform phase sequence test of Generator Plan and prepare for electric welding of two metal pieces Perform drilling operations on metal pieces Assemble and install Generator with its mechanical components Diagnose and remove low frequency fault of Generator Level concrete for machine pad Plan and prepare for work plastering the wall Plaster Masonry the wall Perform wiring test for single phase motor to control speed governor Measure load of different circuits 		
Knowledge Assessment	✓				<ul style="list-style-type: none"> Answer all questions Assessment Panel will have following oral presentation of completed project brief 		
Other Requirements				✓	<ul style="list-style-type: none"> All completed course assignments Completed work forms Completed job records Completed plan for career options related to Micro Hydro Power operations All learner log books and formative assessments completed by Instructor including: <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED FOR THESE COMPETENCY STANDARDS MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of ten hours in two days :

- Perform phase sequence test of Generator
- Plan and prepare for electric welding of two metal pieces
- Perform drilling operations on metal pieces
- Assemble and install Generator with its mechanical components
- Diagnose and remove low frequency fault of Generator
- Level concrete for machine pad
- Plan and prepare for work plastering the wall
- Plaster Masonry the wall
- Perform wiring test for single phase motor to control speed governor
- Measure load of different circuits

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete project brief of Apply Micro Hydro Power (Assistant) skills for MHP plant under observation by Instructor</p>	<p>During practical assessment under observation by an assessor the candidate correctly carried out the following tasks;</p> <ul style="list-style-type: none"> • Perform phase sequence test of Generator <ul style="list-style-type: none"> ✓ Connect the phase sequence meter with Generator ✓ Measure the reading of phase sequence meter ✓ Adjust and calibrate phase sequence at Generator • Plan and prepare for electric welding of two metal pieces <ul style="list-style-type: none"> ✓ Identify worksite for potential health and safety hazards for welding ✓ Use personal protective equipment for welding of metal pieces ✓ Select welding tools and equipment as per job requirement ✓ Apply method of welding on welding process ✓ Prepare welding equipments for required welding ✓ Apply safe welding operations on metal pieces ✓ Prepare and join metals to be welded ✓ Check for defects and welding faults ✓ Carry out corrective measures of welding faults ✓ Perform final quality inspection on welded metal pieces • Perform drilling operations on metal pieces <ul style="list-style-type: none"> ✓ Select drilling tools & equipment according metal pieces ✓ Apply safe drilling process on metal pieces ✓ Perform final quality inspection on metal pieces • Assemble and install Generator with its mechanical components <ul style="list-style-type: none"> ✓ Interpret drawing for assembling of Generator ✓ Assemble component of Gen set using tools. ✓ Carry out adjustment to assembled components and parts of Generator ✓ Perform Rod earthling for Generator ✓ Pre-commissioning test of Generator ✓ Confirm installation of Generator • Use and maintain tools and equipment for mechanical grinding works of metal piece. <ul style="list-style-type: none"> ✓ Select tools and equipment for grinding of metal piece ✓ Apply safe use of tools and equipment • Diagnose and remove low frequency fault of Generator <ul style="list-style-type: none"> ✓ Connect the equipment to diagnose fault ✓ Interpret test result to diagnose faults

	<ul style="list-style-type: none"> ✓ Locate and identify faults of Generator ✓ Troubleshooting the fault ✓ Repair or replace faulty components ✓ Carry out operational testing on generator ✓ Record repair processes • Level concrete for Machine pad. <ul style="list-style-type: none"> ✓ Hand-screed concrete to correct levels ✓ Finish concrete ✓ Cure concrete • Planning and preparing for plastering work <ul style="list-style-type: none"> ✓ Identify and obtaining safety requirements for plastering works ✓ Arrange tools and equipment • Plastering masonry <ul style="list-style-type: none"> ✓ Prepare masonry surface ✓ Establish screed lines or guides ✓ Mix mortar and apply first coat plaster ✓ Apply second coat plaster ✓ Level the plaster ✓ Perform final quality inspection • Perform wiring test for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Inspect wiring and distribution board ✓ Conduct tests ✓ Document test results • Measure load of different circuits <ul style="list-style-type: none"> ✓ Select tools and equipment to measure load of circuit as per layout ✓ Reschedule electrical load as per distribution priority for different circuits
<p>2. Present completed project brief supplied by Instructor</p>	<ul style="list-style-type: none"> • Oral presentation of project brief and completed project work to Assessment Panel. • Presentation to include: <ul style="list-style-type: none"> ✓ Requirements of brief ✓ Planning and preparation of project ✓ Problems encountered and how they were dealt with ✓ Project outcome/s ✓ Lessons learnt from undertaking project (reflective thinking) • Presentation to take no longer than 10 minutes
<p>3. Answer all questions Assessor Panel will have following project presentation</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name

INSTRUCTIONS FOR ASSESSORS

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
1. Complete practical task of Micro Hydro Power (Assistant) skills for MHP plant under observation by Instructor	During practical assessment under observation by an assessor the candidate correctly carried out the following tasks		
Perform phase sequence test of Generator	Connected the phase sequence meter with Generator		
	Measured the reading of phase sequence meter		
	Adjusted and calibrate phase sequence at Generator		
Plan and prepare for electric welding of two metal pieces	Identified worksite for potential health and safety hazards for welding		
	Used personal protective equipment for welding of metal pieces		
	Selected welding tools and equipment as per job requirement		
	Applied method of welding on welding process		
	Prepared welding equipments for required welding		
	Applied safe welding operations on metal pieces		
	Prepared and join metals to be welded		
	Checked for defects and welding faults		
	Carried out corrective measures of welding faults		
	Performed final quality inspection on welded metal pieces		
	Performed drilling operations on metal pieces		
	Selected drilling tools & equipment according metal pieces		
Assemble and install Generator with its mechanical components	Applied safe drilling process on metal pieces		
	Performed final quality inspection on metal pieces		
	Interpreted drawing for assembling of Generator		
	Assembled component of Gen set using tools.		
	Carried out adjustment to assembled components and parts of Generator		
	Performed Rod earthing for Generator		
	Pre-commissioned test of Generator		
	Confirm installation of Generator		
Use and maintain tools and equipment for mechanical grinding works of metal piece.	Selected tools and equipment for grinding of metal piece		
	Applied safe use of tools and equipment		

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
Diagnose and remove low frequency fault of Generator	Connected the equipment to diagnose fault		
	Interpreted test result to diagnose faults		
	Located and identify faults of Generator		
	Troubleshooting the fault		
	Repaired or replaced faulty components		
	Carried out operational testing on generator		
Level concrete for Machine pad.	Hand-screened concrete to correct levels		
	Finished concrete		
	Cured concrete		
Planning and preparing for plastering work	Identified and obtained safety requirements for plastering works		
	Arranged tools and equipment		
Plastering masonry	Prepared masonry surface		
	Established screed lines or guides		
	Mixed mortar and apply first coat plaster		
	Applied second coat plaster		
	Leveled the plaster		
Perform wiring test for single phase motor to control speed governor	Inspected wiring and distribution board		
	Conducted tests		
	Documented test results		
	Measured load of different circuits		
	Selected tools and equipment to measure load of circuit as per layout		
	Rescheduled electrical load as per distribution priority for different circuits		
3. Present completed project brief supplied by Instructor	<ul style="list-style-type: none"> • Oral presentation of project brief and completed project work to Assessment Panel. • Presentation to include: <ul style="list-style-type: none"> ○ Requirements of brief ○ Planning and preparation of project ○ Problems encountered and how they were dealt with ○ Project outcome/s ○ Lessons learnt from undertaking project (reflective thinking) 		
	Presentation to take no longer than 10 minutes		
4. Answer any questions their Assessor may have during the practical assessment	<p>Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application.</p> <p>Assessor to document all questions asked, if any, and the answers here:</p>		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS

- This section contains information regarding;
- Context of the assessment
 - List of required tools and equipment.
 - List of consumable items required during the service

1. Context of Assessment

This task will be performed in MHP plant lab/workshop environment.

Required tools, equipment and consumables will vary according to project brief.

2. List of tools and equipments required

S. No	Tools and equipments and consumables	Quantity
	Mechanical	
1	7 pieces screwdriver set	05
2	Adjustable wrench set	05
3	Allen Keys Set	05
4	Aluminium Spirit Level (levelling instrument)	05
5	Bastard File with wood handle (Flat)	05
6	Bastard File with wood handle (Round)	05
7	Bench Vice	05
8	Bench Workstation	05
9	Chisel	05
10	Clamp Meter	05
11	Claw hammer with wood handle	05
12	Combination Pliers	05
13	Crimping Tool	05
14	Hack Saw with Blades	05
15	Hand Drill [1/8" - 1/8"]	05
16	Hand Grease Gun	05
17	Hand Grinding Machine	05
18	Hot Air Blower	05
19	Measuring tape	05
20	Micro Meter [Screw Gauge]	05
21	Nose Plier	05
22	Oil Can	05
23	Pedestal Drill	05
24	Pen Grinder	05
25	Pipe Wrench [18" & 24"]	05

26	Portable Welding Plant [100 – 300 Amperes]	05
27	Puller	05
28	Punch Set	05
29	Retched Block with Grip	05
30	Screw Driver Set (-)[6"-18"]	05
31	Screw Driver Set (+) [6"-18"]	05
32	Side Cutting Plier	05
33	Spanner Set (Open)	05
34	Spanner Set (Ring)	05
35	Stainless Steel Slogging Ring Spanner	05
36	Thread Gauge	05
37	Tong/Monkey Plier	05
38	Vernier Calliper	05
39	Wheel Grinder	05
40	Wire Gauge	05
41	Welding Plant	05
	Electrical	
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Side Cutter	05
	Safety Tools	
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
	Civil	

1	Air Vent Pipe	05
2	Bell Mouth	05
3	Control Gates	05
4	Control Valves	05
5	Expansion Joint	05
6	Flanges	05
7	Flushing Gates	05
8	Flushing Pipe	05
9	Penstock	05
10	Reducer	05
11	Rubber Seal	05
12	Trash Rack	05
	Electrical	
1	Ballast Tank with Heaters	05
2	Binding wire	05
3	Cable Shoe	05
4	Channel Iron	05
5	Conductors	05
6	D-Iron Set	05
7	Disc Insulator [With Tension Set]	05
8	Earth Wire	05
9	Earthing Plate	05
10	Electrical Panels	05
11	Electronic Load Controller	05
12	Energy Meter	05
13	Generator[Brushed and Brush-less]	05
14	Metal Clad Main Switch	05
15	Pin Insulator	05
16	Pole	05
17	Power Cable	05
18	Pressure Transducer	05
19	Shackle Insulator	05
20	Stay Insulator	05
21	Stay Plate	05
22	Stay Rod	05
23	Stay Wire	05
24	Thimble	05
25	Transformer	05
26	Turn Buckle	05

27	Ultra Sonic Flow Meter	05
	Mechanical	
1	Angle Iron [Cross Arm]	05
2	Butterfly Valve	05
3	Coupling [Flexible/Rigid]	05
4	Cross flow Turbine	05
5	Flat Belt	05
6	Flat Pulleys	05
7	Fly Wheel	05
8	Francis Turbine	05
9	Gate Valve	05
10	Gear Box	05
11	Governor	05
12	Hydraulic Jack	05
13	Operating Rod	05
14	Pelton Turbine	05
15	Propeller/Kaplan Turbine	05
16	Single Phase Variac [Auto Transformer]	05
17	Tachometer	05
18	V Belt	05
19	V-Pulleys	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>LEN0112A.v1 Maintain workplace safety</h1>
Qualification LEN0112.v1 Level: 2 Credit: 8 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipments, material and context of assessment
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN WORKPLACE SAFETY		
Knowledge Assessment	✓	✓	✓	✓	Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> • Follow safe work procedures • Apply tools & equipment safety measures • Follow workplace emergency procedures 		
Other Requirements			✓	✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Any work completed as module assignments • Completed learner logbooks 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following knowledge assessment within 1 hour timeframe on the following topics:

- Follow safe work procedures
- Apply tools & equipment safety measures
- Follow workplace emergency procedures

ACTIVITIES	CANDIDATE RESPONSE
1. Complete knowledge assessment	<ul style="list-style-type: none">• Answer all questions in the knowledge assessment on the following topics:<ul style="list-style-type: none">✓ Following safe work procedures when working with electricity✓ Applying tools & equipment safety measures when working with electricity✓ Following workplace emergency procedures for electrical accident or injury
2. Other requirements	<ul style="list-style-type: none">• All candidate formative assessments completed by Instructor including:<ul style="list-style-type: none">✓ Observations✓ Demonstrations✓ Questions and recorded answers• Any work completed as module assignments• Completed learner logbooks

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Knowledge assessment	<p>Candidate correctly answered all questions in the knowledge assessment on the following topics:</p> <ul style="list-style-type: none"> • Following safe work procedures when working with electricity <ul style="list-style-type: none"> ✓ Organising and arranging duties, tools, equipment materials and work area ✓ Using and storing PPE ✓ Performing tasks in a safe manner • Applying tools & equipment safety measures when working with electricity <ul style="list-style-type: none"> ✓ Checking earthing for safety of equipment ✓ Storing tooling and equipment securely • Following workplace emergency procedures for electrical accident or injury <ul style="list-style-type: none"> ✓ Following safe workplace procedures for dealing with accidents, fires and emergencies within scope of responsibility 		
2. Other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Any work completed as module assignments and projects • Completed learner logbooks 		

4

LIST OF MATERIAL AND CONTEXT OF ASSESSMENT

instructions

This section contains information regarding;

- Context of the assessment
- List of consumable items required during the service

1. Context of Assessment

This knowledge assessment will be conducted in classroom /workshop environment

2. List of consumable items required

S. No	Consumable Items	Quantity
1	Pen	1 per candidate
2	Knowledge assessment including space for answers	1 per candidate



ASSESSMENT MATERIAL	<h1>LEN0272B.v1 Produce a plan for career options related to Micro Hydro Power operations</h1>																																
EVIDENCE GUIDE																																	
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1

ASSESSMENT SUMMARY & RECORD

CANDIDATE NAME:

FATHER NAME:

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PRODUCE A PLAN FOR CAREER OPTIONS RELATED TO MICRO HYDRO POWER OPERATIONS		
Knowledge Assessment	✓	✓	✓	✓	<ul style="list-style-type: none"> • Answer all questions in the oral knowledge assessment on the following topics: <ul style="list-style-type: none"> ○ Gather information for a personal profile ○ Produce a plan for achieving future direction 		
Other Requirements				✓	<ul style="list-style-type: none"> • Provide candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Questions and recorded answers • Completed learner logbooks • Completed career plan as Micro Hydro Power Technician • Completed work forms • Completed job cards 		

2

CANDIDATE ASSESSMENT

Candidate Name:

Father Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete this assessment on the following topics within time frame of one Hour:

- Gather information for a personal profile
- Produce a plan for achieving future direction

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete oral knowledge assessment</p>	<p>Answer all questions in the oral knowledge assessment on this topic:</p> <ul style="list-style-type: none"> • Gather information for a personal profile <ul style="list-style-type: none"> ✓ How did you gather information relevant to own future directions decision-making? ✓ How did you identify options compatible with personal profile? ✓ How did you investigate sources of current career information in terms of planning for future directions? ✓ How did you select information sufficient and relevant to the identified options in terms of producing a plan for future directions? ✓ How did you prioritise and justify options on the basis of gathered information?
<p>2. Provide other requirements</p>	<ul style="list-style-type: none"> • Provide candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Completed learner logbooks • Completed career plan as Micro Hydro Power Technician which includes: <ul style="list-style-type: none"> ○ Short-term goals ○ Long-term goals ○ Milestones ○ Completion date ○ Criteria for review ○ Time period ○ Career plan as Micro Hydro Power Technician includes identified information sources • Completed work forms • Completed job cards

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completed oral knowledge assessment	The candidate correctly answered all questions in the oral knowledge assessment on the following topics:		
	<ul style="list-style-type: none"> • Gather information for a personal profile 		
	<ul style="list-style-type: none"> ✓ How did you gather information relevant to your own decision-making on future directions? 		
	<ul style="list-style-type: none"> ✓ How did you identify options compatible with your personal profile? 		
	<ul style="list-style-type: none"> ✓ How did you investigate sources of current career information to help you plan for your career? 		
	<ul style="list-style-type: none"> ✓ How did you select information sufficient and relevant to the identified options to help you produce a plan for a career? 		
2. Other requirements	<ul style="list-style-type: none"> • Provide candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Completed learner logbooks • Completed career plan as Micro Hydro Power Technician which includes: <ul style="list-style-type: none"> ○ Short-term goals ○ Long-term goals ○ Milestones ○ Completion date ○ Criteria for review ○ Time period • Career plan as Micro Hydro Power Technician includes identified information sources • Completed work forms • Completed job cards 		

4

LIST OF TOOLS , EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	This section contains information regarding; <ul style="list-style-type: none">• Context of the assessment• List of required tools and equipments.• List of consumable items required during the service
1. Context of Assessment	This oral knowledge assessment will be conducted in a classroom or workplace environment

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Pen	
2	Knowledge assessment with space for answers	



ASSESSMENT MATERIAL	<h2 style="margin: 0;">PERFORM GENERAL ROUTINE MAINTENANCE ON MACHINERY, EQUIPMENT AND INFRASTRUCTURE</h2>
EVIDENCE GUIDE	
Qualification LEN0272.v1 Level: 2 Credit: 12 Version: 1	

CONTENTS	<ol style="list-style-type: none"> 1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																										
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Candidate's Consent Candidate's Signature: _____ <div style="margin-left: 150px; width: 500px;"> I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal. </div>																				

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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM GENERAL ROUTINE MAINTENANCE ON MACHINERY, EQUIPMENT AND INFRASTRUCTURE		
Practical Skill Demonstration			✓		<ul style="list-style-type: none"> Should be able to do the routine of MHPP component 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence of routine Maintenance of Fly wheel assembly 		

2

CANDIDATE ASSESSMENT

Candidate's Name:Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks of performing General routine maintenance on machinery, equipment and infrastructure within set timeframe of Three Hours:

- Plan and prepare for preventive maintenance of Generator and its Turbine
- Perform routine inspection of Generator and its Turbine
- Perform General routine maintenance of Generator and its Turbine
- Complete the routine maintenance work of Generator and its Turbine

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment of performing General routine maintenance on machinery, equipment and infrastructure under observation by an Assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Plan and prepare for preventive maintenance of Generator and its turbine <ul style="list-style-type: none"> ✓ Identifying and obtaining safety and other regulatory requirements for maintenance of Generator and its turbine. ✓ Interpretation of engineering drawings of Generator and its turbine. ✓ Identification and selection of tools and equipment for Preventive maintenance of Generator and its turbine • Perform routine inspection of Generator and its Turbine <ul style="list-style-type: none"> ✓ Checks for safety hazards ✓ Carrying out procedures for routine checks ✓ Documenting results • Perform General routine maintenance of Generator and its Turbine <ul style="list-style-type: none"> ✓ Performing basic measurements tests ✓ Perform General routine maintenance procedures ✓ Performing minor adjustments and calibrations • Complete the routine maintenance work of Generator and its Turbine: <ul style="list-style-type: none"> ✓ Complete work related documents and procedures ✓ Perform final quality inspection ✓ Cleaning up and storing tools, equipment and material
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence of routine Maintenance of Fly wheel assembly

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Complete practical assessment of performing General routine maintenance on machinery, equipment and infrastructure under observation by an Assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Plan and prepare for preventive maintenance of Generator and its turbine	Identified and obtaining safety and other regulatory requirements for maintenance of Generator and its turbine. Interpreted of engineering drawings of Generator t and its turbine. Identified and selection of tools and equipment for Preventive maintenance of Generator and its turbine			
Perform routine inspection of generator and its turbine	Checks for safety hazards Carrying out procedures for routine checks Documenting results			
Perform General routine maintenance of Generator and	Performing basic measurements tests Perform General routine maintenance procedures performing minor adjustments and calibrations			
Complete the routine maintenance work of Generator and its Turbine:	Complete work related documents and procedures Perform final quality inspection Cleaning up and storing tools, equipment and material			
2. Complete knowledge assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here</i>			
3. Other requirements	<ul style="list-style-type: none"> Provide verified evidence of routine Maintenance of Fly wheel assembly 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding: <ul style="list-style-type: none"> Context of the assessment List of required tools and equipments. List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
Mechanical		
1	7 pieces screwdriver set	05
2	Adjustable wrench set	05
3	Allen Keys Set	05
4	Aluminium Spirit Level (levelling instrument)	05
5	Bastard File with wood handle (Flat)	05
6	Bastard File with wood handle (Round)	05
7	Bench Vice	05
8	Bench Workstation	05
9	Chisel	05
10	Clamp Meter	05
11	Claw hammer with wood handle	05
12	Combination Pliers	05
13	Crimping Tool	05
14	Hack Saw with Blades	05
15	Hand Drill [1/8" - 1/8"]	05
16	Hand Grease Gun	05
17	Hand Grinding Machine	05
18	Hot Air Blower	05
19	Measuring tape	05
20	Micro Meter [Screw Gauge]	05
21	Nose Plier	05
22	Oil Can	05
23	Pedestal Drill	05
24	Pen Grinder	05
25	Pipe Wrench [18" & 24"]	05
26	Portable Welding Plant [100 – 300 Amperes]	05

27	Puller	05
28	Punch Set	05
29	Retched Block with Grip	05
30	Screw Driver Set (-)[6"-18"]	05
31	Screw Driver Set (+) [6"-18"]	05
32	Side Cutting Plier	05
33	Spanner Set (Open)	05
34	Spanner Set (Ring)	05
35	Stainless Steel Slogging Ring Spanner	05
36	Thread Gauge	05
37	Tong/Monkey Plier	05
38	Vernier Calliper	05
39	Wheel Grinder	05
40	Wire Gauge	05
41	Welding Plant	05
Electrical		
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Side Cutter	05
Safety Tools		
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
Civil		
1	Air Vent Pipe	05

2	Bell Mouth	05
3	Control Gates	05
4	Control Valves	05
5	Expansion Joint	05
6	Flanges	05
7	Flushing Gates	05
8	Flushing Pipe	05
9	Penstock	05
10	Reducer	05
11	Rubber Seal	05
12	Trash Rack	05
Electrical		
1	Ballast Tank with Heaters	05
2	Binding wire	05
3	Cable Shoe	05
4	Channel Iron	05
5	Conductors	05
6	D-Iron Set	05
7	Disc Insulator [With Tension Set]	05
8	Earth Wire	05
9	Earthing Plate	05
10	Electrical Panels	05
11	Electronic Load Controller	05
12	Energy Meter	05
13	Generator[Brushed and Brush-less]	05
14	Metal Clad Main Switch	05
15	Pin Insulator	05
16	Pole	05
17	Power Cable	05
18	Pressure Transducer	05
19	Shackle Insulator	05
20	Stay Insulator	05
21	Stay Plate	05
22	Stay Rod	05
23	Stay Wire	05
24	Thimble	05
25	Transformer	05
26	Turn Buckle	05
27	Ultra Sonic Flow Meter	05

	Mechanical	
1	Angle Iron [Cross Arm]	05
2	Butterfly Valve	05
3	Coupling [Flexible/Rigid]	05
4	Cross flow Turbine	05
5	Flat Belt	05
6	Flat Pulleys	05
7	Fly Wheel	05
8	Francis Turbine	05
9	Gate Valve	05
10	Gear Box	05
11	Governor	05
12	Hydraulic Jack	05
13	Operating Rod	05
14	Pelton Turbine	05
15	Propeller/Kaplan Turbine	05
16	Single Phase Variac [Auto Transformer]	05
17	Tachometer	05
18	V Belt	05
19	V-Pulleys	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1 style="text-align: center;">PERFORM WELDING AT INTRODUCTORY LEVEL</h1>																																										
Qualification LEN0272.v1 Level: 2 Credit: 12 Version: 1																																											
CONTENTS	<ol style="list-style-type: none"> 1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/equipment, material and context of assessment 																																										
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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM WELDING AT INTRODUCTORY LEVEL		
Practical skill demonstration			✓		1. Weld the metal pieces by electric welding		
Knowledge Assessment	✓	✓			2. Answer all questions your assessor may have during the practical assessment		
Other Requirements				✓	3. Provide the verified evidence of Gas Welding of metal pieces		

2

CANDIDATE ASSESSMENT

Candidate's Name.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within set timeframe of **1 One Hours**:

4. Plan and prepare for electric welding of two metal pieces
5. Apply safe welding on two metal pieces.

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of performing welding at introductory level under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ol style="list-style-type: none"> 6. Plan and prepare for electric welding of two metal pieces <ul style="list-style-type: none"> ✓ Identify worksite for potential health and safety hazards for welding ✓ Select and use personal protective equipment for welding of metal pieces ✓ Select welding tools and equipment ✓ Apply method of welding on welding process ✓ Apply safe welding on two metal pieces. 7. Check and prepare welding equipments and materials <ul style="list-style-type: none"> ✓ Apply safe welding operations on metal pieces ✓ Prepare and join metals ✓ Check for defects and welding faults ✓ carry out corrective measures of welding faults ✓ Perform final quality inspection on welded metal pieces
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<ul style="list-style-type: none"> • My answers to questions are correct and demonstrate my understanding of the topics and their application:
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide the verified evidence of Gas Welding of metal pieces

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:..... Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Completes practical task of performing welding at introductory level under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Plan and prepare for electric welding of two metal pieces	Identified worksite for potential health and safety hazards for welding			
	Selected and use personal protective equipment for welding of metal pieces			
	Selected welding tools and equipment			
	Applied method of welding on welding process			
Apply safe welding on two metal pieces.	Checked and prepare welding equipments and materials			
	Applied safe welding operations on metal pieces			
	Prepared and join metals			
	Checked for defects and welding faults carried out corrective measures of welding faults			
2. Answer any questions their assessor may have during the practical assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i></p>			
3. Any other requirements	<ul style="list-style-type: none"> Provide the verified evidence of Gas Welding of metal pieces 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS

This section contains information regarding;

4. Context of the assessment
5. List of required tools and equipment.
6. List of consumable items required during the service

7. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment

8. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
Mechanical /Welding		
1	Welding Plant 1-Phase with welding leads	02
2	Welding Plant Gas	02
3	Iron Hammer	05
4	Wooden Hammer	05
5	Welding Protective Screen	03
6	Welding Goggles	05
7	Safety Shoes	05
8	Welding Rod Holder	05
9	Gas Welding flux	1 Pack
10	Water Tub	02
11	Electric Welding rod different numbers	05
12	Metal pieces	10
13	Gas cylinder filled with oxygen , Methane (DA) Gases	02 Sets
14	Gas Regulator	02 Sets
15	Gas welding Torch	02 Sets
16	Gas welding Rod	02 Packs



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>PERFORM BASIC METAL PROCESSING OPERATIONS USING HAND-HELD POWER TOOLS</h1>
Qualification LEN0272.v1 Level: 2 Credit: 12 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipments, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																		
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																		
	Assessor's Name: _____ Assessor's Code _____																		
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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM BASIC METAL PROCESSING OPERATIONS USING HAND-HELD POWER TOOLS		
Practical skill demonstration			✓		<ul style="list-style-type: none"> Perform metal processing operation 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence file worked metal pieces (Round and Flat) 		

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within set timeframe of *(2)Two* hours:

- Plan and prepare for grinding work on metal pieces.
- Perform grinding operations on metal pieces.
- Perform drilling operations on metal pieces

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of performing basic metal processing operations using hand-held power tools under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Plan and prepare for grinding work on metal pieces. <ul style="list-style-type: none"> ✓ Determine job requirements from specifications ✓ select auxiliary tools, devices and/or equipment to carry out work processes in a safe manner ✓ Minimise health and safety hazards associated with grinding work on metal pieces ✓ Perform final quality inspection • Perform grinding operations on metal pieces. <ul style="list-style-type: none"> ✓ Select grinding tools & equipment for metal pieces. ✓ Apply safe grinding process ✓ Check for conformance with job requirements ✓ Perform final quality inspection • Perform drilling operations on metal pieces <ul style="list-style-type: none"> ✓ Select drilling tools & equipment according metal pieces ✓ Apply safe drilling process on metal pieces ✓ Perform final quality inspection
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence file worked metal pieces (Round and Flat)

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name:

Father Name:

INSTRUCTIONS FOR ASSESSOR

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

The supplied metals requiring basic processing must meet the evidence requirements of the candidate's competence in basic metal processing operations using hand-held power tools.

Set timeframe for practical skill demonstration must reflect the commercially viable timeframe for the tasks.

Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Completes practical task of performing basic metal processing operations using hand-held power tools under observation by an assessor	<p>During a practical assessment, under observation by an assessor, the candidate correctly carried out:</p> <ul style="list-style-type: none"> • Plan and prepare for grinding work on metal pieces. <ul style="list-style-type: none"> ✓ Determine job requirements from specifications ✓ select auxiliary tools, devices and/or equipment to carry out work processes in a safe manner ✓ Minimise health and safety hazards associated with grinding work on metal pieces ✓ Perform final quality inspection • Perform grinding operations on metal pieces. <ul style="list-style-type: none"> ✓ Select grinding tools & equipment for metal pieces. ✓ Apply safe grinding process ✓ Check for conformance with job requirements ✓ Perform final quality inspection • Perform drilling operations on metal pieces <ul style="list-style-type: none"> ✓ Select drilling tools & equipment according metal pieces ✓ Apply safe drilling process on metal pieces ✓ Perform final quality inspection 			
2. Answer any questions their assessor may have during the practical assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i></p>			
3. Any other requirements	Provide verified evidence file worked metal pieces (Round and Flat)			

4

LIST OF TOOLS , EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	This section contains information regarding; <ul style="list-style-type: none"> Context of the assessment List of required tools and equipments. List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

	Mechanical	Quantity
1	Disk Grinder	05
2	Bench Vice	05
3	Pedestal Drill	05
4	Aluminium Spirit Level (levelling instrument)	05
5	Bastard File with wood handle (Flat)	05
6	Bastard File with wood handle (Round)	05
7	Bench Vice	05
8	Bench Workstation	05
9	Chisel	05
10	Claw hammer with wood handle	05
11	Combination Pliers	05
12	Hack Saw with Blades	05
13	Hand Drill [1/8" - 1/8"]	05
14	Hand Grinding Machine	05
15	Oil Can	05
16	Measuring tape	05
17	Micro Meter [Screw Gauge]	05
18	Pedestal Drill	05
19	Pen Grinder	05
20	Pipe Wrench [18" & 24"]	05
21	Portable Welding Plant [100 – 300 Amperes]	05
22	Puller	05
23	Punch Set	05
24	Retched Block with Grip	05
25	Screw Driver Set (-)[6"-18"]	05
26	Screw Driver Set (+) [6"-18"]	05
27	Side Cutting Plier	05
28	Spanner Set (Open)	05
29	Spanner Set (Ring)	05
30	Stainless Steel Slogging Ring Spanner	05
31	Thread Gauge	05
32	Tong/Monkey Plier	05
33	Vernier Calliper	05
34	Wheel Grinder	05
35	Wire Gauge	05
36		
37		
38		
39		

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: ASSEMBLE AND INSTALL MACHINES AND MECHANICAL COMPONENTS		
Practical skill demonstration			✓		<ul style="list-style-type: none"> Install Generator set and its components 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your assessor may have for you during the practical skill demonstration 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide the verified evidence of installation of turbine 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following practical tasks of assembling and installing machines and mechanical components within set timeframe four Hours:

- Assemble and install Generator with its mechanical components
- Test operation of Generator

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical assessment of assembling and installing machines and mechanical components under observation by an Assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Assemble and install Generator with its mechanical components <ul style="list-style-type: none"> ✓ Interpret drawing for assembling of Generator ✓ Assemble component of Gen set using tools. ✓ Carry out adjustment to assembled components and parts of Generator ✓ Perform Rod earthing for Generator ✓ Pre-commissioning test of Generator ✓ Confirm installation of Generator • Test operation on Generator <ul style="list-style-type: none"> ✓ Commission machine and mechanical components ✓ Perform final quality inspection ✓ Cleaning up and storing tools, equipment and material
<p>2. Complete knowledge assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other requirements</p>	<ul style="list-style-type: none"> • Provide the verified evidence of installation of turbine

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:..... Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Complete practical assessment of assembling and installing machines and mechanical components under observation by an Assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Assemble and install gen set with its mechanical components	Interpreted drawing for assembling of Gen Set			
	Assembled component of Gen set using tools.			
	Carried out adjustment to assembled components and parts of Gen set			
	Performed Rod earthing for Gen set			
	Pre-commissioned test of Gen Set			
Test operation on Gen Set	Confirmed installation of Gen set			
	Commission machine and mechanical components			
Perform final quality inspection				
2. Complete knowledge assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached here</i></p>			
3. Other requirements	<ul style="list-style-type: none"> Provide the verified evidence of installation of turbine 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
	Mechanical	
1	7 pieces screwdriver set	05
2	Adjustable wrench set	05
3	Allen Keys Set	05
4	Aluminium Spirit Level (leveling instrument)	05
5	Bastard File with wood handle (Flat)	05
6	Bastard File with wood handle (Round)	05
7	Bench Vice	05
8	Bench Workstation	05
9	Chisel	05
10	Clamp Meter	05
11	Claw hammer with wood handle	05
12	Combination Pliers	05
13	Crimping Tool	05
14	Hack Saw with Blades	05
15	Hand Drill [1/8" – 1/8"]	05
16	Hand Grease Gun	05
17	Hand Grinding Machine	05
18	Hot Air Blower	05
19	Measuring tape	05
20	Micro Meter [Screw Gauge]	05
21	Nose Plier	05
22	Oil Can	05
23	Pedestal Drill	05
24	Pen Grinder	05
25	Pipe Wrench [18" & 24"]	05
26	Portable Welding Plant [100 – 300 Amperes]	05
27	Puller	05

28	Punch Set	05
29	Retched Block with Grip	05
30	Screw Driver Set (-)[6"-18"]	05
31	Screw Driver Set (+) [6"-18"]	05
32	Side Cutting Plier	05
33	Spanner Set (Open)	05
34	Spanner Set (Ring)	05
35	Stainless Steel Slogging Ring Spanner	05
36	Thread Gauge	05
37	Tong/Monkey Plier	05
38	Vernier Calliper	05
39	Wheel Grinder	05
40	Wire Gauge	05
41	Welding Plant	05
Electrical		
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Side Cutter	05
Safety Tools		
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
Electrical		
1	Ballast Tank with Heaters	05
2	Binding wire	05
3	Cable Shoe	05
4	Channel Iron	05

5	Conductors	05
6	D-Iron Set	05
7	Disc Insulator [With Tension Set]	05
8	Earth Wire	05
9	Earthing Plate	05
10	Electrical Panels	05
11	Electronic Load Controller	05
12	Energy Meter	05
13	Generator[Brushed and Brush-less]	05
14	Metal Clad Main Switch	05
15	Pin Insulator	05
16	Pole	05
17	Power Cable	05
18	Pressure Transducer	05
19	Shackle Insulator	05
20	Stay Insulator	05
21	Stay Plate	05
22	Stay Rod	05
23	Stay Wire	05
24	Thimble	05
25	Transformer	05
26	Turn Buckle	05
27	Ultra Sonic Flow Meter	05
	Mechanical	05
1	Angle Iron [Cross Arm]	
2	Butterfly Valve	05
3	Coupling [Flexible/Rigid]	05
4	Crossflow Turbine	05
5	Flat Belt	05
6	Flat Pulleys	05
7	Fly Wheel	05
8	Francis Turbine	05
9	Gate Valve	05
10	Gear Box	05
11	Governor	05
12	Hydraulic Jack	05
13	Operating Rod	05
14	Pelton Turbine	05
15	Propeller/Kaplan Turbine	05
16	Single Phase Variac [Auto Transformer]	05
17	Tachometer	05

18	V Belt	05
19	V-Pulleys	05



ASSESSMENT MATERIAL	<h1>USE AND MAINTAIN HAND TOOLS AND HAND-HELD POWERED TOOLS AND EQUIPMENT</h1>																																		
EVIDENCE GUIDE																																			
Qualification LEN0272.v1 Level: 2 Credit: 12 Version: 1																																			
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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: USE AND MAINTAIN HAND TOOLS AND HAND-HELD POWERED TOOLS AND EQUIPMENT		
Practical skill demonstration			✓		<ul style="list-style-type: none"> Use and maintain hand tools 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> Questions and recorded answers 		

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within set timeframe:

- Use and maintain tools and equipment for domestic electrical wiring on wiring board.
- Use and maintain tools and equipment for mechanical grinding works of metal piece.
- Use and maintain tools and equipment for surface levelling of machine foundation
- Store tools and equipment

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of using and maintaining hand tools and hand-held powered tools and equipment under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly perform the following tasks :</p> <ul style="list-style-type: none"> • Use and maintain tools and equipment for domestic electrical wiring on wiring board. <ul style="list-style-type: none"> ✓ Select tools and equipment for conducting for domestic electric wiring ✓ Apply safe use of tools and equipment • Use and maintain tools and equipment for mechanical grinding works of metal piece. <ul style="list-style-type: none"> ✓ Select tools and equipment for grinding of metal piece ✓ Apply safe use of tools and equipment • Use and maintain tools and equipment for surface levelling of machine foundation <ul style="list-style-type: none"> ✓ Identify and select tools and equipment for levelling of machine foundation ✓ Demonstrate safe use of tools and equipment • Store tools and equipment <ul style="list-style-type: none"> ✓ Clean and calibrate tools and equipment ✓ Label tools and equipment ✓ Store tools and equipment
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Questions and recorded answers

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name: Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This Section Contains Minimum Evidence Requirements. Oral Questioning May Be Used To Clarify Candidate Understanding Of The Topic And Its Application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Completes practical task of using and maintaining hand tools and hand-held powered tools and equipment under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Use and maintain tools and equipment for domestic electrical wiring on wiring board.	Select tools and equipment for conducting for domestic electric wiring Apply safe use of tools and equipment			
Use and maintain tools and equipment for mechanical grinding works of metal piece.	Select tools and equipment for grinding of metal piece Apply safe use of tools and equipment			
Use and maintain tools and equipment for surface levelling of machine foundation	Identify and select tools and equipment for levelling of machine foundation Demonstrate safe use of tools and equipment			
	Store tools and equipment Clean and calibrate tools and equipment Label tools and equipment Store tools and equipment			
2. Answer any questions their assessor may have during the practical assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i>			
3. Any other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ✓ Observations ✓ Demonstrations ✓ Questions and recorded answers • Any work completed as course assignments • Completed work forms • Completed learner logbooks • Completed job cards 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydel Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
Mechanical		
1	Disk Grinding Machine	05
2	Bench Vice	05
3	Metal Piece	05
4	Vernier Calliper	05
5	Micro Meter	05
6	Ruler	05
7	Measuring Tape	05
Electrical		
1	Wiring Board	05
2	Cables and Wires 7.029 ,3.029	05
3	Pahse Sequence meter	05
4	Digital Multi meter	05
5	Screw Driver set	05
6	Insulated Plier	05
7	Fixture I.e Holder , Push Buttons	05
Civil		
01	Level	05



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EVIDENCE GUIDE																																																																	
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	DD MM YYYY		DD MM YYYY	

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:.....		Father's Name:.....						
ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT		
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: TEST ELECTRICAL MACHINES AND MECHANICAL COMPONENTS		COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓		<ul style="list-style-type: none"> Locate the faults of Generator and repair its faults 			
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 			
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence of job card regarding control wiring of Generator panel. 			

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within set timeframe of Two Hours:

- Test Generator of 10 KW and its component for faults
- Diagnose low frequency fault of Generator
- Remove faults of Generator

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of testing electrical machines and mechanical components under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Test D Generator of 10 KW and its component for faults <ul style="list-style-type: none"> ✓ Obtain and interpret testing procedures of Generator ✓ Conduct visual inspection of Generator ✓ Implement testing procedures and record test results to diagnose faults of Generator • Diagnose low frequency fault of Generator <ul style="list-style-type: none"> ✓ Connect the equipment to diagnose fault ✓ Interpret test result to diagnose faults ✓ Locate and identify faults of Generator ✓ Troubleshooting the fault • Remove faults of Generator <ul style="list-style-type: none"> ✓ Repair or replace faulty components ✓ Carry out operational testing on generator ✓ Record repair processes
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence of job card regarding control wiring of DG set panel .

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:.....Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Completes practical task of testing electrical machines and mechanical components under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Test D Generator of 10 KW and its component for faults	Obtained and interpret testing procedures of Generator			
	Conducted visual inspection of Generator			
	Implemented testing procedures and record test results to diagnose faults of Generator			
Diagnose faults of Generator	Interpreted test results to diagnose faults			
	Located and identify faults of Generator			
	Implement troubleshooting procedures of faults			
Remove faults of Generator	Repaired or replace faulty components			
	Carried out operational testing on generator			
	Recorded repair processes			
2. Answer any questions their assessor may have during the practical assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i>			
3. Any other requirements				

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment</p> <p>The Assessor should select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
	Mechanical	
1	7 pieces screwdriver set	05
2	Adjustable wrench set	05
3	Allen Keys Set	05
4	Aluminium Spirit Level (levelling instrument)	05
7	Bench Vice	05
9	Chisel	05
10	Clamp Meter	05
12	Combination Pliers	05
13	Crimping Tool	05
14	Hack Saw with Blades	05
15	Hand Drill [1/8" - 1/8"]	05
16	Hand Grease Gun	05
17	Hand Grinding Machine	05
18	Hot Air Blower	05
19	Measuring tape	05
20	Micro Meter [Screw Gauge]	05
21	Nose Pliers	05
22	Oil Can	05
23	Pedestal Drill	05
24	Pen Grinder	05
25	Pipe Wrench [18" & 24"]	05
26	Portable Welding Plant [100 – 300 Amperes]	05
27	Puller	05
28	Punch Set	05

29	Retched Block with Grip	05
30	Screw Driver Set (-)[6"-18"]	05
31	Screw Driver Set (+) [6"-18"]	05
32	Side Cutting Pliers	05
33	Spanner Set (Open)	05
34	Spanner Set (Ring)	05
35	Stainless Steel Slogging Ring Spanner	05
36	Thread Gauge	05
37	Tong/Monkey Pliers	05
38	Vernier Calliper	05
39	Wheel Grinder	05
40	Wire Gauge	05
41	Welding Plant	05
	Electrical	
	DG Set 10 KW	05
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Pin Plier	05
6	Multi Meter	05
	Safety Tools	
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
12	Trash Rack	05
	Electrical	05
8	Earth Wire	05
9	Earthing Plate	05
10	Electrical Panels	05
11	Electronic Load Controller	05
13	Generator [Brushed and Brush-less]	05
14	Metal Clad Main Switch	05

18	Pressure Transducer	05
11	Governor	05
12	Hydraulic Jack	05
16	Single Phase Variac [Auto Transformer]	05
17	Tachometer	05
18	V Belt	05
19	V-Pulleys	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>APPLY BASIC KNOWLEDGE OF MICRO HYDRO POWER OPERATIONS</h1>
Qualification LEN0272.v1 Level: 2 Credit: 12 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																	
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																	
	Assessor's Name: _____ Assessor's Code _____																	
	Assessor's Signature _____ Date <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center; font-size: 8px;">DD</td> <td style="text-align: center; font-size: 8px;">MM</td> <td colspan="5"></td> <td style="text-align: center; font-size: 8px;">YYYY</td> </tr> </table>											DD	MM					
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CANDIDATE DETAILS	Candidate's Name: _____ <small style="margin-left: 100px;">First Name</small> <small>Last Name</small>																		
	Father's Name _____																		
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ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTC
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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: APPLY BASIC KNOWLEDGE OF MICRO HYDRO POWER OPERATIONS		
Knowledge Assessment		✓			Answer all questions in the knowledge assessment on the following topics: <ul style="list-style-type: none"> • Apply knowledge of main electrical components in MHP operations • Apply knowledge of main mechanical components in MHP operations • Apply knowledge of civil structures in MHP operations 		
Other Requirements				✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Any work completed as course assignments • Completed work forms • Completed learner logbooks • Completed job cards 		

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following knowledge assessment within timeframe of 1 (one) hour :

- Apply knowledge of main electrical components in MHP operations
- Apply knowledge of main mechanical components in MHP operations
- Apply knowledge of civil structures in MHP operations

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete knowledge assessment</p>	<p>Answer all questions in the knowledge assessment on the following topics:</p> <ul style="list-style-type: none"> • Apply knowledge of main electrical components in MHP operations: <ul style="list-style-type: none"> ✓ Purpose of Generators/Alternators ✓ Purpose of electronic load controllers ✓ Purpose of power transformers ✓ Transmission and distribution lines ✓ distribution networks • Apply knowledge of main mechanical components in MHP operations: <ul style="list-style-type: none"> ✓ Purpose of turbines ✓ Purpose of drive systems ✓ Mechanical speed governors used for load control ✓ Valves and pressure gauges • Apply knowledge of civil structures in MHP operations: <ul style="list-style-type: none"> ✓ Purpose of weirs and water intakes ✓ Purpose of channels ✓ Purpose of settling basins ✓ Purpose of spillways ✓ Purpose of force bay tanks ✓ Purpose of penstocks
<p>2. Other Requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including: <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Any work completed as course assignments • Completed work forms • Completed learner logbooks • Completed job cards

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:Father's Name:

**INSTRUCTIONS
FOR
ASSESSOR**

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Complete knowledge assessment	The candidate correctly answered all questions in the knowledge assessment on the following topics:			
Apply knowledge of main electrical components in mhp operations:	Purpose of Generators/Alternators			
	Purpose of electronic load controllers			
	Purpose of power transformers			
	Transmission and distribution lines			
	Distribution networks			
Apply knowledge of main mechanical components in MHP operations	Purpose of turbines:			
	Purpose of drive systems			
	Mechanical speed governors used for load control			
Apply knowledge of civil structures in MHP operations:	Valves and pressure gauges			
	Purpose of weirs and water intakes			
	Purpose of channels			
	Purpose of settling basins			
	Purpose of spillways			
2. Any other requirements	Purpose of force bay tanks			
	Purpose of penstocks			
	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers • Any work completed as course assignments • Completed work forms • Completed learner logbooks • Completed job cards 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none">• Context of the assessment• List of required tools and equipment.• List of consumable items required during the service
1. Context of Assessment	This knowledge assessment will be conducted in a knowledge assessment environment

2. List of consumable items required		
S. No	Consumable Items	Quantity
1	Pen	1 per candidate
2	Knowledge assessment with sufficient space for required answers	1 per candidate



ASSESSMENT MATERIAL	<h1>PERFORM BASIC CONCRETING OPERATIONS</h1>																																																		
EVIDENCE GUIDE																																																			
Qualification LEN0272.v1 Level: 2 Credit: 6 Version: 1																																																			
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1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM BASIC CONCRETING OPERATIONS		
Practical Skill Demonstration			✓		<ul style="list-style-type: none"> Perform basic concreting operation 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence of machine pad foundation 		

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of *2 (two)* hours:

- Dig excavation by hand for foundation for machine pad
- Cast concrete for machine pad
- Level concrete for machine pad

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of performing basic concreting operations under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Dig excavation by hand for foundation for machine pad <ul style="list-style-type: none"> ✓ Use site pegs to identify excavation area for machine pad ✓ Erect safety signs and barriers around excavation area for pad of machine ✓ Install trench and excavation support the foundation pad ✓ Perform safe working practice • Cast concrete for machine pad <ul style="list-style-type: none"> ✓ Mix materials according to job requirements and specifications ✓ Transport and place concrete using appropriate tools and equipment ✓ Hand-compact poured concrete • Level concrete for Machine pad. <ul style="list-style-type: none"> ✓ Hand-screed concrete to correct levels ✓ Finish concrete ✓ Cure concrete • Complete work <ul style="list-style-type: none"> ✓ Complete work related documents and procedures ✓ Perform final quality inspection
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence of machine pad foundation

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:.....Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

Activities	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Completes practical task of performing basic concreting operations under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Dig excavation by hand for foundation for machine pad	Used site pegs to identify excavation area for machine pad			
	Erected safety signs and barriers around excavation area for pad of machine			
	Installed trench and excavation support the foundation pad			
	Performed safe working practice			
Cast concrete for machine pad	Mixed materials according to job requirements and specifications			
	Transported and place concrete using appropriate tools and equipment			
	Hand-compact poured concrete			
	Levelled concrete for Machine pad.			
	Handed-screed concrete to correct levels			
	Finished concrete			
Complete work	Completed work related documents and procedures			
	Performed final quality inspection			
2. Answer any questions their assessor may have during the practical assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i></p>			
3. Any other requirements	<ul style="list-style-type: none"> Provide verified evidence of machine pad foundation 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	<p>This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment</p> <p>The Assessor should select the required tools, equipment and consumables from the list below for the assessment</p>

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
Safety Tools		
2	First Aid Box	01
3	Hand Gloves	05
4	Hard top Hat	05
6	Overall combination [Dress]	05
9	Steel Toe Shoes	05
Civil		
1	Level	05
2	Sal	05
3	Garmala	05
4	Sand	05CFT
5	Crush	05 CFT
6	Cement	05 Bags



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>PERFORM BASIC BRICKLAYING AND PLASTERING OPERATIONS</h1>																																																				
Qualification LEN0272.v1 Level: 2 Credit: 6 Version: 1																																																					
CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment																																																				
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	RECEIVED:	DD MM YYYY	DATE ENTERED INTO DATABASE:	DD MM YYYY

1	ASSESSMENT SUMMARY & RECORD
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Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM BASIC BRICKLAYING AND PLASTERING OPERATIONS		
Practical Skill Demonstration			✓		<ul style="list-style-type: none"> Perform brick laying and its plastering 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence of a wall after bricks laying work 		

2

CANDIDATE ASSESSMENT

Candidate's Name.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of two hours:

- Plan and prepare for work plastering the wall
- Plaster Masonry the wall
- Complete work

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of performing basic bricklaying and plastering operations under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly carry out:</p> <ul style="list-style-type: none"> • Planning and preparing for plastering work <ul style="list-style-type: none"> ✓ Identify and obtaining safety requirements for plastering works ✓ Arrange tools and equipment • Plastering masonry <ul style="list-style-type: none"> ✓ Prepare masonry surface ✓ Establish screed lines or guides ✓ Mix mortar and apply first coat plaster ✓ Apply second coat plaster ✓ Level the plaster • Completing work <ul style="list-style-type: none"> ✓ Complete work related documents and procedures ✓ Perform final quality inspection
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence of a wall after bricks laying work

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name: Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This Section Contains Minimum Evidence Requirements. Oral Questioning May Be Used To Clarify Candidate Understanding Of The Topic And Its Application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Completes practical task of performing basic bricklaying and plastering operations under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Planning and preparing for plastering work	Identified and obtaining safety requirements for plastering works Arranged tools and equipment			
Plastering masonry	Prepared masonry surface			
	Established screed lines or guides			
	Mixed mortar and apply first coat plaster			
	Applied second coat plaster			
Completing work	Levelled the plaster			
	Completed work related documents and procedures Performed final quality inspection			
1. Answer any questions their assessor may have during the practical assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i>			
2. Any other requirements	<ul style="list-style-type: none"> Provide verified evidence of a wall after bricks laying work 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service 	
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment	
2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
	Safety Tools	
2	First Aid Box	01
3	Hand Gloves	05
4	Hard top Hat	05
6	Overall combination [Dress]	05
9	Steel Toe Shoes	05
	Civil	
1	Level	05
2	Sal	05
3	Garmala	05
4	Sand	05CFT
6	Cement	05 Bags
7	kandi	05
8	Taisi	05
9	Water	05
10	Tabra	05
		05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>INSTALL SINGLE AND THREE-PHASE WIRING</h1>																											
Qualification LEN0272.v1 Level: 2 Credit: 10 Version: 1																												
CONTENTS	<ol style="list-style-type: none">1. Assessment Summary and Record2. Candidate Assessment3. Assessor Judgement Guide4. List of required tools/ equipment, material and context of assessment																											
ASSESSMENT AND ASSESSOR DETAILS	<table style="width: 100%;"><tr><td style="width: 50%;">Competent <input type="checkbox"/></td><td style="width: 50%;">Not Yet Competent <input type="checkbox"/></td></tr><tr><td>Assessment <input type="checkbox"/></td><td>Re-Assessment <input type="checkbox"/></td></tr><tr><td>Assessor's Name: _____</td><td>Assessor's Code _____</td></tr><tr><td>Assessor's Signature _____</td><td>Date <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">DD</td><td style="text-align: center;">MM</td><td colspan="6"></td><td style="text-align: center;">YYYY</td></tr></table></td></tr></table>	Competent <input type="checkbox"/>	Not Yet Competent <input type="checkbox"/>	Assessment <input type="checkbox"/>	Re-Assessment <input type="checkbox"/>	Assessor's Name: _____	Assessor's Code _____	Assessor's Signature _____	Date <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">DD</td><td style="text-align: center;">MM</td><td colspan="6"></td><td style="text-align: center;">YYYY</td></tr></table>											DD	MM							YYYY
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ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTTC																											

1	ASSESSMENT SUMMARY & RECORD
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Candidate's Name:.....Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: INSTALL SINGLE AND THREE-PHASE WIRING	COMPETENT	NOT YET COMPETENT
Practical Skill Semonstration			✓		<ul style="list-style-type: none"> Perform single and three phase wiring 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> Provide verified evidence of three Phase DOL Motor Control panel 		

2

CANDIDATE ASSESSMENT

Candidate's Name: Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of **one hour** :

- Plan wiring layout for single phase motor to control speed governor
- Lay cables for single phase motor to control speed governor
- Perform wiring test for single phase motor to control speed governor

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of installing single and three-phase wiring under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Plan wiring layout for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Draw wiring layout ✓ Measure distance to connection points ✓ Estimate material ✓ Prepare tools, equipment and materials • Lay cables for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Prepare installation of cable ✓ Install conduit, GI pipes, PVC pipes and/or ducts ✓ Pull-in and connect cables ✓ Connect fixture • Perform wiring test for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Inspect wiring and distribution board ✓ Conduct tests ✓ Document test results ✓ Perform final quality inspection
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • Provide verified evidence of three Phase DOL Motor Control panel

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name:.....Father's Name:.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS
1. Completes practical task of installing single and three-phase wiring under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:			
Plan wiring layout for single phase motor to control speed governor	Drawn wiring layout			
	Measured distance to connection points			
	Estimated material			
	Prepared tools, equipment and materials			
Lay cables for single phase motor to control speed governor	Prepared installation of cable			
	Installed conduit, GI pipes, PVC pipes and/or ducts			
	Pulled-in and connect cables			
	Connected fixture			
Perform wiring test for single phase motor to control speed governor	Inspected wiring and distribution board			
	Conducted tests			
	Documented test results			
	Performed final quality inspection			
2. Answer any questions their assessor may have during the practical assessment	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i></p>			
3. Any other requirements	<ul style="list-style-type: none"> Provide verified evidence of three Phase DOL Motor Control panel 			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
	Electrical	
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Side Cutter	05
	Safety Tools	
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
	Electrical	
1	Cables and Wires	05
2	Conduit	05
3	Cable Shoe	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>MONITOR CONSTANT ELECTRICITY SUPPLY UNDER SUPERVISION</h1>
Qualification LEN0272.v1 Level: 2 Credit: 10 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																
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1

ASSESSMENT SUMMARY & RECORD

Candidate Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION	PORTFOLIOS		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MONITOR CONSTANT ELECTRICITY SUPPLY UNDER SUPERVISION		
Practical Skill Demonstration			✓		<ul style="list-style-type: none"> • Review electrical load schedule • Set distribution priority • Monitor main and ballast load 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> • Answer all questions your assessor may have during the practical assessment 		
Other Requirements				✓	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ✓ Demonstrations for Load measurement to set Distribution Priority ✓ Questions and recorded answers • Provide verified evidence of monitoring of main and ballast load 		

2

CANDIDATE ASSESSMENT

Candidate's Name:.....Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of *one hour*:

- Measure load of different circuits
- Measure optimum output of MHPP
- Review electrical load schedule at MHPP

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of monitoring constant electricity supply under supervision and by observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Measure load of different circuits <ul style="list-style-type: none"> ✓ Select tools and equipment to measure load of circuit as per layout ✓ Reschedule electrical load as per distribution priority for different circuits • Measure optimum output of MHPP <ul style="list-style-type: none"> ✓ Select tools and equipment to measure output of MHPP ✓ Check voltage drops on each circuit • Review electrical load schedule at MHPP <ul style="list-style-type: none"> ✓ Check layout plan of load ✓ Check input & output voltages ✓ Check voltage drops ✓ Perform logout/tag out after reviewing the load schedule
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>
<p>3. Other Requirements</p>	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ✓ Demonstrations for Load taking to set Distribution Priority ✓ Questions and recorded answers • Provide verified evidence of monitoring of main and ballast load

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS
1. Completes practical task of monitoring constant electricity supply under supervision and observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
Measure Load of different circuits	Select tools and equipment to measure load of circuit as per layout Reschedule electrical load as per distribution priority for different circuits		
Measure optimum output of MHPP	Select tools and equipment to measure output of MHPP Check voltage drops on each circuit		
Review electrical load schedule at MHPP	Check layout plan of load Check input & output voltages Check voltage drops Perform logout/tag out after reviewing the load schedule		
2. Answer any questions their assessor may have during the practical assessment	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attached.</i>		
3. Any other requirements	<ul style="list-style-type: none"> • All candidate formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Demonstrations for Load taking to set Distribution Priority ○ Questions and recorded answers • Provide verified evidence of monitoring of main and ballast load 		

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This practical skill demonstration will be conducted in a Micro Hydro Power Plant lab/workshop environment The Assessor should select the required tools, equipment and consumables from the list below for the assessment

2. List of tools and equipments required		
S. No	Tools and equipments and consumables	Quantity
	Electrical	
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Clamp Meter	05
	Safety Tools	05
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
	Electrical	
10	Electrical Panels	05
11	Electronic Load Controller	05
12	Energy Meter	05
13	Generator[Brushed and Brush-less]	05
14	Metal Clad Main Switch	05
17	Power Cable	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>Apply Micro Hydro Power (Assistant) skills for MHP plant</h1>
Qualification code: LEN0272.v1 Level: 2 Credit: 128 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>
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	Assessor Name: Assessor Code
	Assessor Signature Date

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CANDIDATE DETAILS	Candidate Name: <small style="display: flex; justify-content: space-between; width: 100%;">First Name Last Name</small>
	Father Name
	Institute Name and District
	CNIC # OR
	Registration Number:
	Gender Male <input type="checkbox"/> Female <input type="checkbox"/>
	Candidate Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal. Candidate Signature:

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1

ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: APPLY MICRO HYDEL POWER (ASSISTANT) SKILLS FOR MHP PLANT		
Practical skill demonstration			✓	✓	<ul style="list-style-type: none"> • Perform phase sequence test of Generator • Plan and prepare for electric welding of two metal pieces • Perform drilling operations on metal pieces • Assemble and install Generator with its mechanical components • Diagnose and remove low frequency fault of Generator • Level concrete for machine pad • Plan and prepare for work plastering the wall • Plaster Masonry the wall • Perform wiring test for single phase motor to control speed governor • Measure load of different circuits 		
Knowledge assessment	✓	✓			<ul style="list-style-type: none"> • Answer all questions Assessment Panel will have following oral presentation of completed project brief 		
Other requirements	✓	✓	✓	✓	<ul style="list-style-type: none"> • All completed course assignments • Completed work forms • Completed job records • Completed plan for career options related to Micro Hydro Power operations • All learner log books and formative assessments completed by Instructor including; <ul style="list-style-type: none"> ○ Observations ○ Demonstrations ○ Questions and recorded answers 		

2

CANDIDATE ASSESSMENT

Candidate Name..... Father Name

ALL WORK ASSESSED FOR THESE COMPETENCY STANDARDS MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within timeframe of ten hours in two days :

- Perform phase sequence test of Generator
- Plan and prepare for electric welding of two metal pieces
- Perform drilling operations on metal pieces
- Assemble and install Generator with its mechanical components
- Diagnose and remove low frequency fault of Generator
- Level concrete for machine pad
- Plan and prepare for work plastering the wall
- Plaster Masonry the wall
- Perform wiring test for single phase motor to control speed governor
- Measure load of different circuits

ACTIVITIES	CANDIDATE RESPONSE
1. Complete portfolio of evidence	<ul style="list-style-type: none"> • All completed course assignments • Completed work forms • Completed job records • Completed plan for career options related to Micro Hydro Power operations • All learner log books and formative assessments completed by Instructor including; <ul style="list-style-type: none"> Observations Demonstrations Questions and recorded answers
2. Complete project brief of Apply Micro Hydro Power (Assistant) skills for MHP plant under observation by Instructor	<ul style="list-style-type: none"> • Perform phase sequence test of Generator <ul style="list-style-type: none"> ✓ Connect the phase sequence meter with Generator ✓ Measure the reading of phase sequence meter ✓ Adjust and calibrate phase sequence at Generator • Plan and prepare for electric welding of two metal pieces <ul style="list-style-type: none"> ✓ Identify worksite for potential health and safety hazards for welding ✓ Use personal protective equipment for welding of metal pieces ✓ Select welding tools and equipment as per job requirement ✓ Apply method of welding on welding process ✓ Prepare welding equipment for required welding ✓ Apply safe welding operations on metal pieces ✓ Prepare and join metals to be welded ✓ Check for defects and welding faults ✓ Carry out corrective measures of welding faults ✓ Perform final quality inspection on welded metal pieces • Perform drilling operations on metal pieces <ul style="list-style-type: none"> ✓ Select drilling tools & equipment according metal pieces ✓ Apply safe drilling process on metal pieces ✓ Perform final quality inspection on metal pieces • Assemble and install Generator with its mechanical components <ul style="list-style-type: none"> ✓ Interpret drawing for assembling of Generator ✓ Assemble component of Gen set using tools. ✓ Carry out adjustment to assembled components and parts of Generator ✓ Perform Rod earthing for Generator

	<ul style="list-style-type: none"> ✓ Pre-commissioning test of Generator ✓ Confirm installation of Generator • Use and maintain tools and equipment for mechanical grinding works of metal piece. <ul style="list-style-type: none"> ✓ Select tools and equipment for grinding of metal piece ✓ Apply safe use of tools and equipment • Diagnose and remove low frequency fault of Generator <ul style="list-style-type: none"> ✓ Connect the equipment to diagnose fault ✓ Interpret test result to diagnose faults ✓ Locate and identify faults of Generator ✓ Troubleshooting the fault ✓ Repair or replace faulty components ✓ Carry out operational testing on generator ✓ Record repair processes • Level concrete for Machine pad. <ul style="list-style-type: none"> ✓ Hand-screed concrete to correct levels ✓ Finish concrete ✓ Cure concrete • Planning and preparing for plastering work <ul style="list-style-type: none"> ✓ Identify and obtaining safety requirements for plastering works ✓ Arrange tools and equipment • Plastering masonry <ul style="list-style-type: none"> ✓ Prepare masonry surface ✓ Establish screed lines or guides ✓ Mix mortar and apply first coat plaster ✓ Apply second coat plaster ✓ Level the plaster ✓ Perform final quality inspection • Perform wiring test for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Inspect wiring and distribution board ✓ Conduct tests ✓ Document test results • Measure load of different circuits <ul style="list-style-type: none"> ✓ Select tools and equipment to measure load of circuit as per layout ✓ Reschedule electrical load as per distribution priority for different circuits
<p>3. Present completed project brief supplied by Instructor</p>	<ul style="list-style-type: none"> • Oral presentation of project brief and completed project work to Assessment Panel. • Presentation to include: <ul style="list-style-type: none"> ○ Requirements of brief ○ Planning and preparation of project ○ Problems encountered and how they were dealt with ○ Project outcome/s ○ Lessons learnt from undertaking project (reflective thinking) • Presentation to take no longer than 10 minutes
<p>4. Answer all questions Assessor Panel will have following project presentation</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

3

ASSESSOR JUDGEMENT GUIDE

Candidate Name Father Name

INSTRUCTIONS FOR ASSESSMENT PANEL	<p>THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS.</p> <ul style="list-style-type: none"> The Assessment Panel will consist of a registered Assessor, the candidate's Instructor, and a private sector expert The project brief will consist of integrated task requirements to enable the candidate to supply sufficient evidence of their competence in the skills required to work as a MHP (Assistant) The project brief must be suitable for the level of knowledge and skills required (i.e. Level 2) The timeframe for completion of assigned project brief is 5 working days The candidate may work in a team or as an individual to complete the project brief. If in a team, the contribution of each candidate must be clearly defined and observable.
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ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
1. Present portfolio of evidence	All completed course assignments		
	<ul style="list-style-type: none"> Completed work forms Completed job records 		
	<ul style="list-style-type: none"> Completed plan for career options related to Micro Hydro Power operations 		
	<ul style="list-style-type: none"> All learner log books and formative assessments completed by Instructor including; <ul style="list-style-type: none"> ✓ Observations ✓ Demonstrations ✓ Questions and recorded answers 		
2: Complete project brief of Apply Micro Hydro Power (Assistant) skills for MHP plant under observation by Instructor	During a practical assessment, under observation by an assessor, the candidate correctly carried out:		
	<ul style="list-style-type: none"> ✓ Perform phase sequence test of Generator 		
	<ul style="list-style-type: none"> ✓ Connect the phase sequence meter with Generator 		
	<ul style="list-style-type: none"> ✓ Measure the reading of phase sequence meter 		
	<ul style="list-style-type: none"> ✓ Adjust and calibrate phase sequence at Generator 		
	<ul style="list-style-type: none"> Plan and prepare for electric welding of two metal pieces <ul style="list-style-type: none"> ✓ Identify worksite for potential health and safety hazards for welding ✓ Use personal protective equipment for welding of metal pieces ✓ Select welding tools and equipment as per job requirement ✓ Apply method of welding on welding process ✓ Prepare welding equipment for required welding ✓ Apply safe welding operations on metal pieces ✓ Prepare and join metals to be welded ✓ Check for defects and welding faults ✓ Carry out corrective measures of welding faults ✓ Perform final quality inspection on welded metal pieces 		

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
	<ul style="list-style-type: none"> • Perform drilling operations on metal pieces <ul style="list-style-type: none"> ✓ Select drilling tools & equipment according metal pieces ✓ Apply safe drilling process on metal pieces ✓ Perform final quality inspection on metal pieces • Assemble and install Generator with its mechanical components <ul style="list-style-type: none"> ✓ Interpret drawing for assembling of Generator ✓ Assemble component of Gen set using tools. ✓ Carry out adjustment to assembled components and parts of Generator ✓ Perform Rod earthing for Generator ✓ Pre-commissioning test of Generator ✓ Confirm installation of Generator • Use and maintain tools and equipment for mechanical grinding works of metal piece. <ul style="list-style-type: none"> ✓ Select tools and equipment for grinding of metal piece ✓ Apply safe use of tools and equipment • Diagnose and remove low frequency fault of Generator <ul style="list-style-type: none"> ✓ Connect the equipment to diagnose fault ✓ Interpret test result to diagnose faults ✓ Locate and identify faults of Generator ✓ Troubleshooting the fault ✓ Repair or replace faulty components ✓ Carry out operational testing on generator ✓ Record repair processes • Level concrete for Machine pad. <ul style="list-style-type: none"> ✓ Hand-screed concrete to correct levels ✓ Finish concrete ✓ Cure concrete • Planning and preparing for plastering work <ul style="list-style-type: none"> ✓ Identify and obtaining safety requirements for plastering works ✓ Arrange tools and equipment • Plastering masonry <ul style="list-style-type: none"> ✓ Prepare masonry surface ✓ Establish screed lines or guides ✓ Mix mortar and apply first coat plaster ✓ Apply second coat plaster ✓ Level the plaster ✓ Perform final quality inspection • Perform wiring test for single phase motor to control speed governor <ul style="list-style-type: none"> ✓ Inspect wiring and distribution board ✓ Conduct tests ✓ Document test results • Measure load of different circuits <ul style="list-style-type: none"> ✓ Select tools and equipment to measure load of circuit as per layout ✓ Reschedule electrical load as per distribution priority for different circuits 		
3. Present	<ul style="list-style-type: none"> • Oral presentation of project brief and completed 		

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES/NO		ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
completed project brief supplied by Instructor	project work to Assessment Panel. <ul style="list-style-type: none"> • Presentation to include: <ul style="list-style-type: none"> ○ Requirements of brief ○ Planning and preparation of project ○ Problems encountered and how they were dealt with ○ Project outcome/s ○ Lessons learnt from undertaking project (reflective thinking) • Presentation to take no longer than 10 minutes 			
4. Answer any questions their Assessor may have during the practical assessment	Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application. Assessor to document all questions asked, if any, and the answers here:			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

Instructions

- This section contains information regarding;
- Context of the assessment
 - List of required tools and equipment.
 - List of consumable items required during the service

1. Context of Assessment

This task will be performed in MHP plant lab/workshop environment.

Required tools, equipment and consumables will vary according to project brief.

2. List of tools and equipment required

S. No	Tools and equipment and consumables	Quantity
Mechanical		
1	7 pieces screwdriver set	05
2	Adjustable wrench set	05
3	Allen Keys Set	05
4	Aluminium Spirit Level (levelling instrument)	05
5	Bastard File with wood handle (Flat)	05
6	Bastard File with wood handle (Round)	05
7	Bench Vice	05
8	Bench Workstation	05
9	Chisel	05
10	Clamp Meter	05
11	Claw hammer with wood handle	05
12	Combination Pliers	05
13	Crimping Tool	05
14	Hack Saw with Blades	05
15	Hand Drill [1/8" – 1/8"]	05
16	Hand Grease Gun	05
17	Hand Grinding Machine	05
18	Hot Air Blower	05
19	Measuring tape	05
20	Micro Meter [Screw Gauge]	05
21	Nose Plier	05
22	Oil Can	05
23	Pedestal Drill	05
24	Pen Grinder	05
25	Pipe Wrench [18" & 24"]	05

26	Portable Welding Plant [100 – 300 Amperes]	05
27	Puller	05
28	Punch Set	05
29	Retched Block with Grip	05
30	Screw Driver Set (-)[6"-18"]	05
31	Screw Driver Set (+) [6"-18"]	05
32	Side Cutting Plier	05
33	Spanner Set (Open)	05
34	Spanner Set (Ring)	05
35	Stainless Steel Slogging Ring Spanner	05
36	Thread Gauge	05
37	Tong/Monkey Plier	05
38	Vernier Calliper	05
39	Wheel Grinder	05
40	Wire Gauge	05
41	Welding Plant	05
	Electrical	
1	Clamp Meter	05
2	Combination Plier	05
3	Earth Tester	05
4	Line Tester	05
5	Megger	05
6	Multi Meter	05
7	Nose Plier	05
8	Pin Plier	05
9	Screw Driver Set	05
10	Side Cutter	05
	Safety Tools	
1	Fire Extinguisher	05
2	First Aid Box	05
3	Hand Gloves	05
4	Hard top Hat	05
5	Mask	05
6	Overall combination [Dress]	05
7	Safety Belt	05
8	Safety Goggles	05
9	Steel Toe Shoes	05
	Civil	


1	Air Vent Pipe	05
2	Bell Mouth	05
3	Control Gates	05
4	Control Valves	05
5	Expansion Joint	05
6	Flanges	05
7	Flushing Gates	05
8	Flushing Pipe	05
9	Penstock	05
10	Reducer	05
11	Rubber Seal	05
12	Trash Rack	05
	Electrical	
1	Ballast Tank with Heaters	05
2	Binding wire	05
3	Cable Shoe	05
4	Channel Iron	05
5	Conductors	05
6	D-Iron Set	05
7	Disc Insulator [With Tension Set]	05
8	Earth Wire	05
9	Earthing Plate	05
10	Electrical Panels	05
11	Electronic Load Controller	05
12	Energy Meter	05
13	Generator[Brushed and Brush-less]	05
14	Metal Clad Main Switch	05
15	Pin Insulator	05
16	Pole	05
17	Power Cable	05
18	Pressure Transducer	05
19	Shackle Insulator	05
20	Stay Insulator	05
21	Stay Plate	05
22	Stay Rod	05
23	Stay Wire	05
24	Thimble	05
25	Transformer	05
26	Turn Buckle	05

27	Ultra Sonic Flow Meter	05
	Mechanical	
1	Angle Iron [Cross Arm]	05
2	Butterfly Valve	05
3	Coupling [Flexible/Rigid]	05
4	Cross flow Turbine	05
5	Flat Belt	05
6	Flat Pulleys	05
7	Fly Wheel	05
8	Francis Turbine	05
9	Gate Valve	05
10	Gear Box	05
11	Governor	05
12	Hydraulic Jack	05
13	Operating Rod	05
14	Pilton Turbine	05
15	Propeller/Kaplan Turbine	05
16	Single Phase Variac [Auto Transformer]	05
17	Tachometer	05
18	V Belt	05
19	V-Pulleys	05

National Vocational and Technical Training Commission (NAVTC)

 5th Floor Evacuee Trust Complex Sector F-5/1, Islamabad.

 +92 51 9044 04

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 info@navttc.org

 www.navttc.org