

OCCUPATIONAL PROFILE FOR LINEMAN (DISTRIBUTION SYSTEM)

Workers Behaviour		General Knowledge and Skills	
<ul style="list-style-type: none"> • Creative • Dedicated • Energetic • Enjoy outdoor work • Flexible • Friendly • Hard working • Innovative • Patient • Physically fit • Reliable • Responsible • Safety conscious • Self controlled • Self disciplined • Sensitive • Sincere • Team work • Technical oriented • Time conscious 		<ol style="list-style-type: none"> 1. Basic electrical knowledge 2. Knowledge on environmental conservation 3. Knowledge on safety precaution 4. Knowledge on company rules and regulations 5. Knowledge on distribution system 6. Knowledge on electrical standards and codes 7. Knowledge on employment and labour laws 8. Knowledge on first-aid 9. Knowledge on power line and power system 10. Knowledge on storage of materials 11. Knowledge on tools, equipment and materials 12. Knowledge on work planning and organizing 13. Skills and knowledge on installations of line / cable 14. Skills in climbing poles 15. Skills in communication 16. Skills in time management 17. Skills in problem solving quickly 	
TOOLS AND EQUIPMENT		CONCERNS AND FUTURE TRENDS	
<ul style="list-style-type: none"> • Allen key • Block and tackle • Combination plier • Dee and ring spanner • Drill set • Earthing set • Hammer • Hot line tester • Insulation tape • Knife • Long nose plier • Multimeter • Neon tester • Power chain • Rope • Screw driver set • Side cutting plier • Sliding wrench • Socket wrench • Spade • Spirit level • Welding machine 		<ul style="list-style-type: none"> • Lack of computer knowledge • Lack of quality safety gear • Lack of refresher training • Better facilities for lineman in future • More qualified linemen in future • More respect to lineman profession • More women joining this profession • New technology development in future 	
<ul style="list-style-type: none"> • Wire cutter • Blower • Cordless phone / Walkie talkie • Crimping tool • Crow bar • Earth tester • Files • GPS equipment • Hacksaw • Ladder • Measuring tape • Megger • Pulleys • Roller • Safety belt • Safety boots • Safety gloves • Safety helmet • Tongue tester • Torch light • Torque wrench 			

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Occupational Profile for LINEMAN (Distribution System)

Level 2

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Royal Government of Bhutan

Produced for

**Training Providers, Employers, Employees,
Trainees and Interested General Public.**

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Thimphu**

07 - 28 November 2007

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LINEMAN (Distribution System) : Duties & Tasks

27 - 29 November 2007

Duties		Tasks										
A	Construct overhead line	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
		Survey line route	Estimate line length	Clear line route	Identify location of pole	Dig hole to erect pole and stay	Erect pole	Concrete pole	Erect stay	Climb pole	Install hardware fitting	Install insulator
		A12	A13	A14	A15	A16						
		Lay conductor on ground	String conductor	Test line	Set pole	Paint pole						
B	Construct underground line	B1	B2	B3	B4	B5	B6	B7	B8	B9		
		Prepare work plan	Dig trench	Spread sand inside trench	Lay cable	Lay concrete brick	Back fill trench	Mark cable route	Test cable	Connect cable		
C	Construct substation	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
		Prepare site for substation	Lay out site	Dig foundation for transformer plinth	Prepare formwork for plinth construction	Mix concrete	Cast transformer plinth	Erect substation pole	Fix lightning arrester	Install earth connection (body, neutral, lightning arrester)	Install cross arm	Install Gang Operating (GO) switch
		C12	C13	C14	C15	C16	C17	C18	C19			
		Install dropout fuse	Install transformer (ground)	Install pole mounted transformer	Connect low voltage cable	Lay out gravel in substation	Weld wire mesh, earth strip and channel	Fence substation	Install pipe earthing			
D	Perform testing and charging of line	D1	D2	D3	D4	D5	D6	D7	D8		F14	F15
		Carry out physical inspection of line	Ensure notification to media	Remove temporary earthing	Megger line	Ensure statutory clearance	Consult with colleague	Test charge	Charge line		Tighten jumper	Check supply of hot line
E	Perform service connection	E1	E2	E3	E4	E5	E6	E7	E8	E9	F13	F12
		Obtain instruction	Check energy meter	Assess internal load	Conduct earth test	Conduct insulation test	Install energy meter	Charge service cable	Check three phase sequence	Seal energy meter	Replace underground cable	Remove underground cable
F	Maintain distribution line	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
		Receive complaint	Carry out visual inspection	Identify fault	Check voltage	Seek shutdown permission	Maintain clearance	Replace pole	Replace fuse	Replace conductor	Replace insulator	Remove overhead line
G	Maintain transformer	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
		Measure peak hour load	Check oil level	Check oil leakage	Check colour of silica gel	Disconnect GO switch	Check fuse rating	Replace silica gel	Check tap position	Check gap of arching horn	Tighten connection	Check neutral grounding
H	Maintain circuit breaker and GO switch	H1	H2	H3	H4	H5	H6	H7	H8	H9		G12
		Trip line	Open panel	Drag out circuit breaker	Check mechanical part	Check protective relay	Check housing component of breaker	Re-assemble panel	Check GO contact	Clean GO contact		Clean transformer
I	Perform low voltage cable joints	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11
		Measure cable	Cut cable	Splice cable	Clean cable terminal	Fix aluminium ferrule	Crimp ferrule	Connect armour	Insulate cable	Perform terminal joint	Perform straight joint	Perform T-joint
J	Observe safety precaution	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11
		Wear safety gear	Refer safety instruction	Provide anti-climbing device on pole	Dispose damaged materials	Ensure clear communication	Short cable / conductor	Provide safety awareness to public	Use hot stick	Report any hazards or damage to supervisor	Provide lock and key in substation	Perform cardiopulmonary resuscitation during accident
K	Upgrade skills and knowledge	K1	K2	K3	K4	K5	K6	K7	K8			
		Seek advice from seniors	Surf internet	Refer manuals	Attend refresher courses	Attend training / seminars	Interact with colleagues	Practice work ethics	Refer electrical codes			