

# NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

NSDA Reference  
To be added by NSDA

## CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

### Name and address of submitting body:

Power Sector Skill Council, 2nd Floor, CBIP Building Malcha Marg,  
Chanakyapuri, New Delhi

### Name and contact details of individual dealing with the submission

**Name:** Vinod Behari

**Position in the organisation:** Chief Executive Officer

**Address if different from above:**

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## List of documents submitted in support of the Qualifications File

1. Qualification Pack

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## SUMMARY

<b>Qualification Title</b>	Lineman Distribution (Multi- Skilled)
<b>Qualification Code</b>	PSS/Q2011
<b>Nature and purpose of the qualification</b>	<p>Nature of the qualification</p> <ul style="list-style-type: none"><li>- Qualification Pack (QP)</li></ul> <p>The main purpose of the qualification</p> <ul style="list-style-type: none"><li>- Erection of Power Distribution Lines and sub-stations</li><li>- Laying of underground and AB cables</li><li>- Manually remove, change and install Low Voltage, single and three phase meters</li><li>- Types of House wiring and fault repair in house wiring</li><li>- Mains, distribution, controls circuits and protection in house wiring</li><li>- Use basic health and safety practices for power related works</li><li>- Work effectively with others</li></ul>
<b>Body/bodies which will award the qualification</b>	Power Sector Skill Council
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Power Sector Skill Council
<b>Body/bodies which will carry out assessment of learners</b>	Navriti Technologies Pvt Ltd, Bangalore Induslynk Training Service Pvt Ltd., Gurgaon Aspiring Minds Assessment Pvt Ltd., Gurgaon Manipal City and Builds Pvt Ltd. New Delhi Trendsetters Skill Assessors Pvt Ltd., Gurgaon Ace Assessments Pvt Ltd., New Delhi Assure Quality Management Certification Services Pvt Ltd. , Panchkula Prima Competencies Pvt Ltd., New Delhi etc.
<b>Occupation(s) to which the qualification gives access</b>	Lineman Distribution (Multi- Skilled) (Level 4)
<b>Licensing requirements</b>	As per the guideline issued by Central Electricity Authority (CEA), Ministry of Power, Govt. of India/ respective State Govt. in this regard as amended from time to time
<b>Level of the qualification in the NSQF</b>	4
<b>Anticipated volume of training/learning</b>	300

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<b>required to complete the qualification</b>			
<b>Entry requirements and/or recommendations</b> 8 <sup>th</sup> Pass			
<b>Progression from the qualification</b> NA			
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b> RPL arrangements and policies are already in place.			
<b>International comparability where known</b> NA			
<b>Date of planned review of the qualification.</b> The Qualification will expire on 31/03/2019			
<b>Formal structure of the qualification</b>			
<b>Title of component and identification code.</b>	<b>Mandatory / Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
PSS/N0106 (Erection of Power Distribution Lines and sub-stations)	Mandatory	72	4
PSS/N0108 (Laying of underground and AB cables)	Mandatory	50	4
PSS/N0114 (Manually remove, change and install Low voltage, single and three phase meters)	Mandatory	48	4
PSS/ N 6001 (Types of House wiring and fault repair in house wiring)	Mandatory	40	4
PSS/ N 6002 (Mains, distribution, controls, circuits and protection in house wiring)	Mandatory	46	4
PSS/N2001 (Use basic health and safety practices for Power related work)	Mandatory	30	4
PSS/N1336 (Work effectively with others)	Mandatory	14	4

Please attach any document giving further detail about the structure of the qualification - eg a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information

- Qualification Pack is attached as Annexure 1

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## SECTION 1 ASSESSMENT

### **Body/Bodies which will carry out assessment:**

1. Navriti Technologies Pvt Ltd, Bangalore
2. Induslynk Training Service Pvt Ltd., Gurgaon
3. Aspiring Minds Assessment Pvt Ltd., Gurgaon
4. Manipal City and Builds Pvt Ltd. New Delhi
5. Trendsetters Skill Assessors Pvt Ltd., Gurgaon
6. Ace Assessments Pvt Ltd., New Delhi
7. Assure Quality Management Certification Services Pvt Ltd. , Panchkula
8. Prima Competencies Pvt Ltd., New Delhi

### **How will RPL assessment be managed and who will carry it out?**

RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack.

### **Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.**

The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement etc. The assessment sets are then reviewed by PSSC official for consistency. The assessments are designed so as to assess maximum parts during the practical hands on work. The technical limitations at the training centres are taken care in theory and viva. Criteria such as use of lift to pick heavy objects or selection of fire extinguisher during a fire are also assessed under theory/viva.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments. The assessment agencies are instructed to Ideally have assessor with minimum 15 years industry experience as an ITI graduate / minimum 10 years' industry experience as diploma engineer and minimum 5 years' industry experience as graduate engineer.

The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to PSSC Assessment Framework, competency based assessments, assessors guide etc.

The assessors are provided with assessors guide developed by the Subject Matter Expert of the assessment agency as per the assessment framework. The assessment guides are developed to ensure the maximum possible consistency in the assessment by different assessors and elaborate

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on the following

- 1 Qualification Pack Structure
- 2 Guidance for the assessor to conduct theory, practical and viva assessments
- 3 Guidance for trainees to be given by assessor before the start of the assessments.
- 4 Guidance on assessments process, practical brief with steps of operations practical observation checklist and mark sheet
- 5 Viva guidance for uniformity and consistency across the batch.
- 6 Guidance on assessment evidence collection

The assessment results are backed by evidences collected by assessors.

- 1 The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In charge /Head of the Training Centre.
- 2 The assessor needs to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.
- 3 The assessor needs to take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.
- 4 The assessor needs to carry a camera to click photograph of the trainees working on the job and giving theory exam as evidence.
- 5 The assessor also needs to carry a photo ID card.
- 6 The assessor also needs to take the photographs as evidence from appropriate angles/sides of the final work piece/job submitted by the trainee. This evidence is signed by the trainee at the time of submission of the job piece.
- 7 The assessor needs to measure the dimensions and finish of the submitted job piece as per the tolerance or standards mentioned in the assessment guide.
- 8 The assessor will also check internal record of assignments, performance records and feedback provided to candidates.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments. This code of conduct is enclosed. The assessment agencies are instructed to Ideally have assessor with minimum 15 years industry experience as an ITI graduate / minimum 10 years' industry experience as diploma engineer and minimum 5 years' industry experience as graduate engineer.

Please attach any documents giving further information about assessment and/or RPL. Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

## ASSESSMENT EVIDENCE

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**Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.**

*NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information - i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.*

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## CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role** Qualifications Pack For Lineman Distribution (Multi- Skilled)

**Qualification Pack** PSS/Q2011

**Sector Skill Council** Power

### Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

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Compulsory NOS				Marks Allocation	
Total Marks:900					
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
1.PSS/ N 0106: Erection of Power Distribution Lines and sub- station	PC1. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines		3	1	2
	PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for electrical and related operations	100	3	1	2
	PC3. work following laid down procedures and instructions		2	1	1
	PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location		1	0	1
	PC5. ensure work area is clean and safe from hazards before and after the job is completed		1	0	1
	PC6. identify job requirements for specific operations as per instructions given from valid sources : job instruction		2	1	1
	PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications		2	1	1
	PC8. ensure equipment and tools required for Distribution installation work are identified, acquired, calibrated, suitable and approved for use		2	1	1
	PC9. Carry out survey of proposed route line		2	0	2
	PC10. Identify, estimate and acquire correct materials required for the installation work		1	0	1
	PC11. ensure loading and unloading operations for pole parts in a safe and efficient manner		2	1	1

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	PC12. determine pole location(s) as per approved procedures		3	1	2
	PC13. ensure excavation operations are carried out with the help of ground crew for pole setting template, as per requirement and specifications, in a safe and efficient manner		3	1	2
	PC14. perform pole erection procedures as per requirements and specifications, in a safe and efficient manner		3	1	2
	PC15. install grounding for pole installation where required and cross arm fixing to the pole before erection		2	1	1
	PC16. ensure pit filling and concreting is done as per requirement, as correct procedures		4	1	3
	PC 17. Follow applicable construction standards e.g. REC construction standards, for carrying out the erection procedures		3	1	2
	PC 18. install pole guys/ stays and anchors as required, as per standard procedure		2	1	1
	PC19. perform stay wire assembly as per requirements and specifications, safely and efficiently		3	1	2
	PC20. install travelers on poles or insulators		2	1	1
	PC21. temporarily run conductor/rope through travelers to reduce friction when sagging		4	1	3
	PC22. attach pulling equipment to conductor/rope		4	1	3
	PC23. Set up and operate stringing equipment when using tension stringing method, derrick method		2	0	2
	PC24. carry out conductor stringing procedures, paving conductor on the ground along the pole taking into account permissible span length and sagging		2	0	2
	PC25. transfer conductor from travelers to insulators		3	0	3
	PC26. secure conductor using clamps or ties		2	0	2
	PC27. Carry out erection of poles mounted distribution sub-station as per REC constructional standard F2		3	1	2

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	PC28. Ensure maintenance of necessary clearances for execution of poles mounted distribution sub-station		4	1	3
	PC29. Carry out earthing arrangements for pole mounted distribution sub- station as per REC constructional standard F10		2	0	2
	PC30. Ensure 3 separate earthing with each for lightening arrestor, transformer body with metal parts and neutral		3	1	2
	PC 31. Ensure proper rating of LT mains cable & fuses (HT & LT) during pole mounting sub-station installation		2	0	2
	PC32. thoroughly check the line for clearances		3	1	2
	PC 33. check guarding and stays for correctness and suitability		2	0	2
	PC34. install warning devices and signage		2	0	2
	PC35. inspect the pole and related components to check if it is as per specification and without defects		2	0	2
	PC36. Ensure that before commissioning the distribution transformer, all earthing connections are carried out and earth resistance is maintained within limits		3	1	2
	PC37. Check breather, oil level in the conservator, HT & LT side jumper connections		3	1	2
	PC38. Carry out pre-commissioning test of distribution transformer viz. IR test, Continuity test etc		2	0	2
	PC39. shut down and store equipment to a safe condition on completion of the activities		2	0	2
	PC40. leave the work area in a safe and tidy condition on completion of the erection activities		2	0	2
	PC41. refer unresolved job related problems to appropriate personnel for support		1	0	1
	PC42. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem		1	0	1
		<b>Total</b>	<b>100</b>	<b>24</b>	<b>76</b>
<b>2. PSS/ N 0108:</b>	PC1. work safely at all times, complying with health and		5	1	4

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Laying of underground and AB cables	safety legislation, regulations and other relevant guidelines				
	PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for Electrical and related operations		5	1	4
	PC3. work following laid down procedures and instructions		4	1	3
	PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location		3	0	3
	PC5. ensure work area is clean and safe from hazards before and after the job is completed		3	0	3
	PC6. identify job requirements for specific operations as per instructions given from valid sources : job instruction sheet	<b>100</b>	4	1	3
	PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications		4	1	3
	PC8. ensure all tools, equipment and material supplies required for the work are acquired and transported safely to the work site		3	0	3
	PC9. check tools and equipment for calibration and assess suitability for use		3	0	3
	PC10. check and select the correct types of cables for the job		4	1	3
	PC11. ensure the cable and joints are suitable and as per job requirement		4	1	3
	PC12. determine cable installation and laying location(s) as per approved procedures		7	2	5
	PC13. ensure the trench digging operations have been completed as per requirement and specifications, in a safe and efficient manner		5	2	3
	PC14. lay down cable as per requirement, including				

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	cleaning, lubricating, setting of conduit and pulling cables through conduit safely and without damage		7	2	5
	PC15. pull cable through conduit using equipment such as tension machines, winches and capstans		4	1	3
	PC16. ensure cables are set to proper depth, and properly aligned		4	1	3
	PC17. ensure pit back filling, brick laying and concreting is done as per requirement, as correct procedures		5	2	3
	PC18. Carry out stringing and jointing of AB Cables		5	2	3
	PC19. follow applicable construction standards e.g. REC construction standards, for carrying out the laying procedures		5	2	3
	PC20. perform post-installation procedures for ensuring clean and safe environment in the work and surrounding area		4	1	3
	PC21. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved		3	0	3
	PC22. leave the work area in a safe and tidy condition on completion of the laying activities		3	0	3
	PC23. refer unresolved job related problems to appropriate personnel for support		3	0	3
	PC24. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem		3	0	3
		<b>Total</b>	<b>100</b>	<b>22</b>	<b>78</b>
<b>3. PSS/ N 0114: Manually remove, change and install Low Voltage, single and three</b>	PC1. obtain job specification or work order from responsible authority	<b>100</b>	2	0	2
	PC2. select and use appropriate personal protective equipment (PPE) suitable to the work as per occupational health and safety guidelines		3	1	2

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<b>phase meters</b>	PC3. select and use appropriate tools and equipment in accordance with the tasks	3	1	2
	PC4. confirm that the selected tools and equipment are safe and ready for use	2	0	2
	<b>PC5. verify the distance between the poles or cables is correct</b>	2	<b>0</b>	2
	<b>PC6. check the underground and/or overhead cables are laid correctly as per work order</b>	2	<b>0</b>	2
	<b>PC7. plan and locate the area inside or outside the customer's premise after assessing possible risks</b>	3	<b>0</b>	3
	<b>PC8. check that the identified area is accessible to carry out installation, meter testing, commissioning, reading, recording and maintenance</b>	2	<b>0</b>	2
	<b>PC9. ensure the energy meter is correct, examined and tested, and meets all the parameters and specifications set by the Bureau of Indian Standards (BIS)</b>	4	<b>2</b>	2
	<b>PC10. follow safe working practices in accordance with instructions given in the organizational standards and regulations to prevent injury to self and others while carrying out work</b>	4	<b>1</b>	3
	<b>PC11. inspect the facility's wiring system and recognize any possible risks to be isolated such as faulty circuit, loose ends, naked wires, etc.</b>	3	<b>0</b>	3
	<b>PC12. check the consumer's wiring system for any common phase or looping of phase of two or more consumers</b>	3	<b>0</b>	3

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	PC13. inform all affected parties of the intended work plan in advance prior to disconnecting power supply line		2	0	2
	PC14. install the energy meter and required supportive equipment using appropriate insulated tools and devices as per organizational procedures		6	2	4
	PC15. equip the energy meter with various anti-tampering features as per regulations and organizational procedures		6	2	4
	PC16. establish immunity against various types of external factors in accordance with relevant regulations		4	1	3
	PC17. ensure the energy meter displays one of more of the following parameters depending upon the tariff requirement for different categories of consumers		4	1	3
	PC18. check that any replaced or repaired equipment are working properly and customer's problems are duly resolved efficiently		3	1	2
	PC19. check the energy meter for earth leakage indication as per relevant regulations		3	1	2
	PC20. test and calibrate the energy meter using appropriate testing devices in line with organizational quality standards and regulations		6	2	4
	PC21. identify and escalate unresolved problems to appropriate authority for rectifications		3	0	3
	PC22. establish the reason for changing the energy meter from responsible source in order to plan the work out		2	0	2
	PC23. identify the meter type, required tools and devices and the recommended removal procedures		5	2	3
	PC24. replace the same with a duly tested energy meter as per instructions given in organizational guidelines and regulations		4	2	2

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	PC25. test to confirm that the replaced energy meter conforms to required work specifications		3	1	2
	PC26. record the metered data and maintain all the information related to the consumer's energy meter		2	0	2
	PC27. verify the accuracy of the metered data		3	0	3
	PC28. maintain consumer meters' account history, installation date and testing details, calibration and replacement of meters in line with organizational standards and policies		3	1	2
	PC29. check that tools and devices used are disassembled and stored safely as per instructions		3	1	2
	PC30. dispose waste materials such as wires, tapes, plastic caps, etc. in line with safety and environmental procedures		3	1	2
	PC31. leave the work area is in safe conditions and clear of any hazardous substances		2	0	2
		<b>Total</b>	<b>100</b>	<b>23</b>	<b>77</b>
<b>4. PSS/ N 6001 Types of House wiring and fault repair in house wiring</b>	PC1. Develop circuit and wiring diagram and electrical signages, code specifications to plan wiring layouts, consumption points accurately, as may be required		3	2	1
	PC2. Understand and use of various types of tools, their functions and application for carrying out work		6	4	2
	PC3. Understand rating and current carrying capacity of wires, cables, fuse, switches, sockets, MCBs, ELCBs and other electrical accessories	<b>100</b>	5	2	3

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	PC1. Lay conduit pipe concealed and open wiring, batten, casing-capping and temporary cleat wiring		4	1	3
	PC2. Implement system in most economical way		5	2	3
	PC3. Understand correct requirement of wires, cables, fuse, switches and other electrical accessories for optimal expenditure		6	3	3
	PC4. Ensure wiring and points selected in wiring is according to load growth in future		5	2	3
	PC5. Use under-voltage protective devices, choice of setting of protective devices, labelling of protective devices, switches and terminals		6	0	6
	PC6. Ensure insulation resistance of all live conductors to earth, insulation resistance between live conductors.		4	1	3
	PC7. Impliment methods of protection against electric shock		5	0	5
	PC8. selection of equipment appropriate to external influences, access to switchgear and equipment, presence of warning signs and danger notices		5	2	3
	PC9. Understand updated technology products also consider its ageing		4	1	3
	PC1. Inspect fault locating points e.g. fuse blown, MCB, RCD trip or short circuit location in Wiring circuit		4	1	3
	PC2. Check open circuit due to overheated switches, socket and wires in control board due to loose contact and overload		4	1	3

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	PC3. Check polarity to ensure all switches are connected in phase conductors		5	0	5
	PC4. Check equal distribution of load on three phase wiring in large residential and commercial units		5	2	3
	PC5. Check the color coding, proper selection of conductors, wires and connectors and connections of single pole device		5	3	2
	PC6. Check routing of cables, checking proper selection of conductors, checking connection of single pole device		3	1	2
	PC7. Work safely at all times, complying with health and safety legislation, regulation and other relevant guidelines		3	0	3
	PC8. Adhere to procedures for safety to wear PPE's.		5	1	4
	PC9. Ensure that all tools & tackles, fittings, accessories etc. are in safe and usable condition		4	0	4
	PC4. Ensure work area is clean and safe from hazards before and after the job is completed		4	1	3
			100	30	70
<b>5. PSS/ N 6002 Mains, distribution, controls, circuits and protection in house wiring</b>	PC1. Understand standard location of main board ensure for utility's service line connection		6	3	3
	PC2. Understand layout of main switch, circuit breakers require at main board	<b>100</b>	5	2	3
	PC3. Ensure of controlling and protection devices for different circuits being used for lighting and power loads at each floor or portion		4	2	2

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	PC4. Check types of conduit, batten, underground and open wiring		4	1	3
	PC5. Locate and mark the position of conduit pipe Ensures, connections into the structures with proper equipment's like measuring tape, hammer, saw, drill machines etc.		4	1	3
	PC6. Cut openings in structures to accommodate conduit pipes or pipe fittings, using hand or power tools		4	0	4
	PC7. Read plan Ensure around obstructions like electrical wiring, gas fittings etc.		4	2	2
	PC8. Laying of conduit pipe with clamps		1	0	1
	PC9. Install brackets and hangers to support electrical equipment		1	0	1
	PC10. Install, replace and repair lighting fixtures and electrical control and distribution equipment, such as switches, relays and circuit breaker panels		6	2	4
	PC11. Lay & pull wire through conduits and through holes in walls and floors		4	0	4
	PC12. Join and connect wire to fixtures and components to form circuits		6	2	4
	PC13. Prepair extended line for additional points with bearing capacity of existing system or augment/replacement of existing lines to with hold the additional load		5	2	3
	PC14. Install the protective device i.e. fuse, MCB, RCCB, MCCB's ratings as per the load		6	2	4
	PC15. Ensure proper working and functioning of all protective devices that are necessary to save		3	1	2

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	lives of human, livestock, animals				
	PC16. Ensure fuse, switch or circuit breaker should not be placed in an earthed neutral conductor and are wired only in the phase conductor only		3	0	3
	PC17. Ensure all the connections are made properly, tightened and color coding		4	1	3
	PC18. Ensure that the correct type, size and current-carrying capacity of cables is chosen to bear the load		3	1	2
	PC19. Ensure that the all accessible points which may be switched on/off must be easily approached by the users		3	2	1
	PC20. Understand types of earthing plate and pipe earthing layout location		4	2	2
	PC21. Understand importance of earth connection with household gadgets and equipments		3	2	1
	PC22. Understand procedure of earth connection with appliance, sockets main board and distribution board		3	1	2
	PC23. Use of devices available in market such as trimmers, impulse relay, programmable switch, twilight switch, movement detector		2	0	2
	PC24. Ensure of assembling of various type, design and capacity fans, tube lights, LED lights, bulbs, lamps, doorbells, switches, geysers, inverters, exhaust fan, safety alarams, decorative lights and chandliers		3	1	2

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	PC25. Ensure of various size and capacity water pump motors according to the load with their control circuit of water level in tank		<b>3</b>	<b>1</b>	<b>2</b>
	PC26. Make connections and operate instruments to check the healthiness of house wiring in terms of leakage insulation resistance		<b>2</b>	<b>0</b>	<b>2</b>
	PC27. Operate instruments to check the continuity, open circuit, short circuit and load flow		<b>2</b>	<b>0</b>	<b>2</b>
	PC28. Operate instruments to check the earth resistance		<b>2</b>	<b>0</b>	<b>2</b>
	<b>TOTAL</b>		<b>100</b>	<b>31</b>	<b>69</b>
<b>6. PSS/ N 2001: Use basic health and safety practices at the workplace</b>	PC1. Follow general safety precautions and rules for working safely		<b>3</b>	<b>1</b>	<b>2</b>
	PC2. Ensure implementation of CEA regulation 2010 for safety & electric supply		<b>2</b>	<b>0</b>	<b>2</b>
	PC3. use protective clothing/equipment for specific tasks and work conditions		<b>3</b>	<b>0</b>	<b>3</b>
	PC4. state the name and location of people responsible for health and safety in the workplace		<b>2</b>	<b>0</b>	<b>2</b>
	PC5. state the names and location of documents that refer to health and safety in the workplace		<b>2</b>	<b>0</b>	<b>2</b>
	PC6. identify job-site hazardous work and state possible causes of risk or accident in the workplace	<b>100</b>	<b>3</b>	<b>1</b>	<b>2</b>
	PC7. follow electrical safe working procedures such		<b>3</b>	<b>1</b>	<b>2</b>

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	as Tag out/Lock out, PTW (Permit To Work),				
	PC8. follow warning signs (danger, out of service, etc.) while working with electrical systems		1	0	1
	PC9. use standard safe working practices when working at heights, confined areas and trenches		3	1	2
	PC10. test any electrical equipment and system using insulated testing devices before touching them		3	1	2
	PC11. ensure positive isolation of electrical equipment & system as per given standards		3	1	2
	PC12. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed		3	1	2
	PC13. carry out safe working practices while dealing with hazards to ensure the safety of self and others		3	1	2
	PC14. state methods of accident prevention in the work environment of the job role		2	0	2
	PC15. state location of general health and safety equipment in the workplace		2	0	2
	PC16. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladders		2	0	2
	PC17. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa		3	1	2
	PC18. inspect power plant and its equipment routinely for any signs of oil, water and/or steam leakage		3	0	3
	PC19. store flammable materials and machine lubricating oil safely and correctly		2	0	2

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	PC20. check that the emission and pollution control devices are working properly in line with environmental policy standards		2	1	1
	PC21. apply good housekeeping practices at all times		3	1	2
	PC22. identify common hazard signs displayed in various areas		2	0	2
	PC23. retrieve and/or point out documents that refer to health and safety in the workplace		2	0	2
	PC24. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly		2	0	2
	PC25. use the various appropriate fire extinguishers on different types of fires correctly		3	1	2
	PC26. demonstrate rescue techniques applied during fire hazard		3	1	2
	PC27. demonstrate good housekeeping in order to prevent fire hazards		3	1	2
	PC28. demonstrate the correct use of a fire extinguisher		3	1	2
	PC29. demonstrate how to free a person from electrocution		3	1	2
	PC30. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		2	0	2
	PC31. demonstrate basic techniques of bandaging		3	1	2
	PC32. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC33. perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC34. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	1	2
	PC35. demonstrate the artificial respiration and the CPR		3	1	2

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	Process				
	PC36. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work		3	1	2
	PC37. complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC38. demonstrate correct method to move injured people and others during an emergency		3	1	2
	<b>Total</b>		<b>100</b>	<b>24</b>	<b>76</b>
<b>7. PSS/N1336 Work effectively with others</b>	PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required		10	3	7
	PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3. give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible		10	3	7
	PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	<b>100</b>	10	3	7
	PC6. display appropriate communication etiquette while working		10	3	7
	PC7. display active listening skills while interacting with others at work		10	3	7
	PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	3	7
	PC9. demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7

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	<b>Total</b>		<b>100</b>	<b>30</b>	<b>70</b>
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## SECTION 2 EVIDENCE OF LEVEL

### OPTION B

Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Prepare for erection of Power Distribution Lines and Sub- Stations</li> <li>• Erection Power Distribution Lines and Sub- Stations</li> <li>• Commissioning</li> <li>• Preparing cables and other materials for job</li> <li>• Laying down cables</li> <li>• Carrying out maintenance</li> <li>• Removing and replacing a single or a three phase meter</li> <li>• Meter recording procedures post installation</li> <li>• Develop various types of house wiring planning and drawings/layouts according to specific situation</li> <li>• Wiring selection, size, ratings of cables, accessories optimization &amp; forecasting</li> <li>• Common electrical wiring faults, identification and repair of wiring of residential and commercial units</li> <li>• Ensure of mains, distribution board and protection devices</li> <li>• Ensure of new power points, extension boards</li> <li>• Ensure of protective devices</li> <li>• Types of earthing, procedure to lay and its connection in house wiring. and electrical appliances</li> <li>• Types and use of test instruments in house wiring</li> <li>• Working safely</li> </ul>	<ul style="list-style-type: none"> <li>• The Ensure of mains, distribution board, junction box, switches, lamp holders, fittings, plugs, sockets and protective devices like fuses, MCB, ELCB,RCD etc. and earthing in the best possible manner in domestic houses.</li> <li>• An Electrician must have good Knowledge of different types of wiring that is being carried out according to the budget of house owner. Skills to utilize the resources-best design, latest technology and longevity of house wiring in best possible way that is also cost effective keeping the protection of wiring, house hold gadgets and property.</li> <li>• An electric meter technician is responsible for installing, removing or changing, testing and maintaining Low Voltage(LV) consumer energy meters (single phase or three phase) and meter supportive equipment that are used to record energy consumption in residential, commercial or industrial units.</li> <li>• This unit covers the competencies required technicians to lay underground and AB cables for setting up Power Distribution Lines. This includes working with the crew to dig trenches, prepare and lay wiring, handling of tools and equipment for laying and commissioning and carrying out necessary tasks in a safe, efficient and effective manner.</li> </ul>	4

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Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		<ul style="list-style-type: none"> <li>This unit covers the competencies required technicians to erect and commissioning for Power Distribution Lines. This includes working with the crew to install poles, dismantle poles and lay wiring, handling of tools and equipment for installation and carrying out necessary tasks in a safe, efficient and effective manner.</li> </ul>	
<b>Professional knowledge</b>	<ul style="list-style-type: none"> <li>Materials and accessories used in power distribution system e.g. poles, insulator, machine bold, suspension plan, strain clamp, overhead earth wire, cross arms and braces, conductors and accessories, bolts and nuts, plates and back plates, grounding cables</li> <li>Erection of pole mounting 11/.433 KV distribution sub-station. Erection of double pole structure and various fittings including AB switches ( GO switches), HG fuses, lightening arrestor and earthing arrangements</li> <li>LT/HT Distribution system and its components importance of following job instructions and defined procedures for tower/pole erection</li> <li>Material preparation methods and techniques to be undertaken, prior to laying cables</li> <li>Personal protective equipment (PPE) and clothing that must be worn during the cable laying and maintenance activity and from where can it be obtained:- PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), zola, safety rope</li> <li>Depth of groove, channel size, clamping, boxes, hole pass on walls, pre lanter fittings and hooks on ceiling etc. Knowledge of inserting steel wire to drag the bunch of wires through conduit pipe</li> <li>Tools and tackles used for house wiring e.g. tool's bag containing combination plier, cutter, screw drivers, hammer, chisel, drill machine, wrench set, hacksaw etc. importance of tools and equipment to be kept in a safe and usable condition</li> <li>Laying staircase, corridor, electric alarm, inverter and other related</li> </ul>	<ul style="list-style-type: none"> <li>The Ensure of mains, distribution board, junction box, switches, lamp holders, fittings, plugs, sockets and protective devices like fuses, MCB, ELCB,RCD etc. and earthing in the best possible manner in domestic houses.</li> <li>An Electrician must have good Knowledge of different types of wiring that is being carried out according to the budget of house owner. Skills to utilize the resources-best design, latest technology and longevity of house wiring in best possible way that is also cost effective keeping the protection of wiring, house hold gadgets and property.</li> <li>An electric meter technician is responsible for installing, removing or changing, testing and maintaining Low Voltage(LV) consumer energy meters (single phase or three phase) and meter supportive equipment that are used to record energy consumption in residential, commercial or industrial units.</li> <li>This unit covers the competencies required technicians to lay underground and AB cables for setting up Power Distribution Lines. This includes working with the crew to dig trenches, prepare and lay wiring, handling of</li> </ul>	4

## NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<p>circuits using push button, two way, door and limit switches</p> <ul style="list-style-type: none"> <li>• Product, their ratings, current carrying capacity, color coding, loading capacity and their connection in case of extension/augmentation in existing system</li> <li>• Test instruments like test lamp, multimeter, neon tester, clamp on meter, insulation and earth megger and ensure safe usage</li> </ul>	<p>tools and equipment for laying and commissioning and carrying out necessary tasks in a safe, efficient and effective manner.</p> <ul style="list-style-type: none"> <li>• This unit covers the competencies required technicians to erect and commissioning for Power Distribution Lines. This includes working with the crew to install poles, dismantle poles and lay wiring, handling of tools and equipment for installation and carrying out necessary tasks in a safe, efficient and effective manner.</li> </ul>	
<b>Professional skill</b>	<ul style="list-style-type: none"> <li>• Follow organization rule-based decision making process</li> <li>• Take decision with systematic course of actions and/or response and use the quality parameters to take decisions on any variations of work at site from job specification issued</li> <li>• Understand importance of proper documentation</li> <li>• Planning and organization of tasks to meet deadlines</li> <li>• Build customer relationships and use customer centric approach</li> <li>• Seek and comprehend operation related inputs for clarification</li> <li>• Find ways of modifying difficult operating stages to make them operation friendly</li> <li>• Apply domain information to set and define operation parameters that ensures economy and quality of the product</li> <li>• Critically evaluate operation parameters in relation to product features intended develop holistic and comprehensive profile of products based on segregated</li> <li>• Work systematically and logically to resolve the issues and identify causation and anticipate unexpected results</li> <li>• Find ways of modifying difficult operating stages to make it operation friendly</li> <li>• Plan layout of wiring, to become shortest and reliable path</li> </ul>	<p>The job involves working in familiar, predictable, routine, situation of clear choice such as preparing and maintaining work area and process equipment's.</p> <p>Hence, it qualifies as a Level 4 role. Since it does not involve several choices to be made even in a familiar context, the role does not qualify for Level 5.</p> <p>This role requires the job holder to work in a familiar, predictable, routine of clear choice and the activities that h/she is expected to perform are not limited in range.</p> <p>This requires him to prepare for erection of Power Distribution Lines and Sub- Stations, conduct Erection Power Distribution Lines and Sub Stations and Commissioning</p> <p>Hence it cannot be placed at level 3.</p>	<b>4</b>

## NSQF QUALIFICATION FILE GUIDANCE

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Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Develop holistic and comprehensive profile of products based on segregated discrete process stages of blank forming processes</li> <li>Apply domain information to set and define operation parameters that ensures economy and quality of the product</li> </ul>		
<b>Core skill</b>	<ul style="list-style-type: none"> <li>Ensure work area is clean and safe from hazards before and after the job is completed</li> <li>Check the color coding, connection and identification of conductors, cables and wires</li> <li>Understand rating and current carrying capacity of wires, cables, fuse, switches, sockets, MCBs, ELCBs and other electrical accessories</li> <li>Develop circuit and wiring diagram and electrical signage, code specifications to plan wiring layouts, consumption points accurately, as may be required</li> <li>Install the energy meter and required supportive equipment using appropriate insulated tools and devices as per organizational procedures</li> <li>Select and use appropriate personal protective equipment (PPE) suitable to the work as per occupational health and safety guidelines. Personal protective equipment: hard working caps, protective glasses, rubber gloves, fall arrest and restraint, safety footwear, fire-resistant clothing, etc.</li> <li>Select and use appropriate tools and equipment in accordance with the tasks. Tools and equipment: e.g. insulated hand tools; drills; hacksaw; hand tools; testing equipment; insulation testers; crimping tools; wires and cables of various colours and sizes; heat shrink sleeving and flexible conduit; terminals and connectors; electrical tape; etc</li> </ul>	<p>The job holder is expected to have factual knowledge of field of knowledge or study. Mentioned areas are related to factual knowledge of field of knowledge, the role qualifies for Level 4.</p> <p>The job holder is expected to know more than basic facts and principles, such as he/she is expected to be familiar with all machines and equipment's. He/she is expected to check the working and performance of all machineries and tools. Since this role requires factual knowledge of field of stringing, erection of pole mounting, correct sagging etc, hence it cannot be pegged at level 3.</p>	<b>4</b>

# NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Plan and locate the area inside or outside the customer's premise after assessing possible risks</li> <li>Work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines</li> <li>Avoid using jargon, slang or acronyms when communicating with a customer, unless it is required</li> <li>Undertake basic numerical computations and calculations</li> <li>Units and number systems representing degree of accuracy: decimals places, significant figures, fractions as a decimal quantity use metric systems of measurement</li> <li>Discuss task lists, schedules, and work-loads with co-workers</li> <li>Escalation matrix and procedures for reporting work and employment related issues</li> </ul>		
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Ensure equipment and tools required for Distribution installation work are identified, acquired, calibrated, suitable and approved for use</li> <li>Ensure work area is clean and safe from hazards before and after the job is completed</li> <li>Ensure excavation operations are carried out with the help of ground crew for pole setting template, as per requirement and specifications, in a safe and efficient manner</li> <li>Ensure pit filling and concreting is done as per requirement, as correct procedures</li> <li>Carry out earthing arrangements for pole mounted distribution sub-station as per REC constructional standard F10</li> <li>Ensure 3 separate earthing with each for lightning arrestor, transformer body with metal parts and neutral</li> <li>Ensure that before commissioning the distribution transformer, all earthing connections are carried out and earth resistance is maintained within limits</li> </ul>	<p>The job holder is expected to carry out routine and repetitive activities in a narrow range of application, using appropriate rule and tool.</p> <p>All activities are mostly repetitive and have a narrow range of application, hence qualifying the role for a Level 4.</p> <p>As this job requires a lot of experience and observation skills ,For Example, the job holder is expected for analysing critical points in day to day tasks through experience and observation , planning and organizing the work and jobs , planning to utilise time and equipment's effectively, and identify control measures to solve the issue, etc. and identify problems and reviewing related information to develop and evaluate options and implement solutions</p>	<b>4</b>

## NSQF QUALIFICATION FILE GUIDANCE

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Title/Name of qualification/component: Lineman Distribution (Multi- Skilled)		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Refer unresolved job related problems to appropriate personnel for support</li> <li>• Ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location</li> <li>• Ensure the trench digging operations have been completed as per requirement and specifications, in a safe and efficient manner</li> <li>• Ensure the energy meter is correct, examined and tested, and meets all the parameters and specifications set by the Bureau of Indian Standards (BIS)</li> <li>• Maintain consumer meters' account history, installation date and testing details, calibration and replacement of meters in line with organizational standards and policies</li> </ul>	Therefore, it cannot be pegged at level 3.	

# NSQF QUALIFICATION FILE GUIDANCE

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## SECTION 3

### EVIDENCE OF NEED

#### What evidence is there that the qualification is needed?

Govt. of India is undertaking electrification of all the un-electrified 404.06 Lakhs households in the rural area under the Pradhan Mantri Sahaj Bijli Har Ghar Yojna (SAUBHAGYA) by Mar-2019 and it is proposed to provide skilled manpower to ensure quality of work and timely completion. As per the ground level survey the project will require around 55,000 of skilled manpower particularly in the field of erection of Power Distribution Lines & Sun-station, installation of energy meters and domestic wiring in the proposed households to be electrified.

#### What is the estimated uptake of this qualification and what is the basis of this estimate?

Based on the ground level survey reports the work involves multi skilled functions such as

- Erection of lines and substations
- Installation of energy meters
- Domestic wiring for household electrification

As per GOI report the estimated un-electrified households in the country as on Oct 2017 is 404.06 Lakhs with over 383 Lakhs in six focus states of Assam, Bihar, Jharkhand, Odisha, Madhya Pradesh, Uttar Pradesh spread over 200 districts.

#### What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

- NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work
- NSDC QRC team also confirmed the same

#### What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

- Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation.
- Monitoring of results of assessments
- Employer feedback will be sought post-placement
- The Qualification will expire on 31/03/2019. PSSC will seek a formal approval in case the SAUBHAGYA Skilling initiative gets extended beyond Mar-2019.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

- SAUBHAGYA proposal already sent to MSDE/MoP attached.

# NSQF QUALIFICATION FILE GUIDANCE

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## SECTION 4

### EVIDENCE OF PROGRESSION

**What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?**

- Vertical mobility have been articulated, horizontal mobility will be articulated once full occupational mapping of the sector is completed.
- Vertical Mobility to Senior Lineman Distribution

Please attach any documents giving further information about any of the topics above. Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.