

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
2. List of companies and Industry associations participated in the development of these qualification packs (part of report)
3. List of QP/NOS validating companies.

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SUMMARY

Qualification Title	Junior Engineer (JE) -Power Distribution
Qualification Code	PSS/Q3004
Nature and purpose of the qualification	Nature of the qualification - Qualification Pack (QP) The main purpose of the qualification - Carry out Installation in power distribution systems - Carry out operation and maintenance of power distribution system
Body/bodies which will award the qualification	Power Sector Skill Council
Body which will accredit providers to offer courses leading to the qualification	Power Sector Skill Council
Body/bodies which will carry out assessment of learners	Navriti Tehcnologies 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 Qualaity Management Certification Services Pvt Ltd. , Panchukula Prima Competencies Pvt Ltd., New Delhi
Occupation(s) to which the qualification gives access	Junior Engineer- Power Distribution (Level 5)
Licensing requirements	N/A
Level of the qualification in the NSQF	5
Anticipated volume of training/learning required to complete the qualification	350
Entry requirements and/or recommendations	Diploma in Electrical and minimum age should be 20 years
Progression from the	Engineer- Power Distribution (Level 6)

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qualification			
Planned arrangements for the Recognition of Prior learning (RPL)		RPL arrangements and policies are under development. The guidelines should be ready in 2-3 months.	
International comparability where known		In the process of being developed	
Date of planned review of the qualification.		19/07/2018	
Formal structure of the qualification			
Title of component and identification code.	Mandatory/Optional	Estimated size (learning hours)	Level
PSS/N3007 Installation	Mandatory	186	5
PSS/N3008 Operation & Maintenance	Mandatory	112	5
PSS/N2001 Use basic health and safety practices for power related work	Mandatory	32	5
PSS/N1336 Work effectively with others	Mandatory	24	5
Add boxes as required for alignment.			

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.

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SECTION 1 ASSESSMENT

Body/Bodies which will carry out assessment:

1. Navriti Tehcnologies 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 Qualaity Management Certification Services Pvt Ltd. , Panchukula
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 on the following

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- 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

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

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

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Junior Engineer (JE) -Power Distribution

Qualification Pack PSS/Q3004

Sector Skill Council Power Sector Skill Council

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

Assessable Outcomes	Assessment Criteria for Outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. PSS/N3007 Installation	• apply understanding of power distribution system	100	6	2	4
	• apply knowledge of type of distribution systems with respect to voltage level, network configuration (ring main/redial etc.)		6	2	4
	• apply understanding of cables/conductors their size and specifications		6	2	4
	• carry out erection and commissioning of substation		6	2	4

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	<ul style="list-style-type: none"> carry out the route survey for O/H line or U/G cable distribution supply 		6	2	4
	<ul style="list-style-type: none"> carry out installation of distribution transformer 		6	2	4
	<ul style="list-style-type: none"> supervise of erection of line poles, substation, O/H line or U/G cable, switchgear etc. 		6	2	4
	<ul style="list-style-type: none"> plan and execute service line connection for customers 		4	1	3
	<ul style="list-style-type: none"> ensure that all the tools & equipment needed for erection or installation are available at site 		4	1	3
	<ul style="list-style-type: none"> undertake meter installation at customer premises 		4	1	3
	<ul style="list-style-type: none"> apply knowledge of SCADA and GIS Mapping 		6	2	4
	<ul style="list-style-type: none"> ensure proper earthing of equipment for healthy operation 		4	1	3
	<ul style="list-style-type: none"> undertake installation of protection devices- surge protection device, over voltage protection etc. 		4	1	3
	<ul style="list-style-type: none"> read and understand network schematic, line diagrams and related technical drawings 		6	2	4
	<ul style="list-style-type: none"> coordinate and manage all the logistics, material planning and handling related issues 		4	1	3
	<ul style="list-style-type: none"> monitor power supply from substation during work in progress 		4	1	3
	<ul style="list-style-type: none"> test and inspect transformer, switchgear etc. on post commissioning 		4	1	3
	<ul style="list-style-type: none"> have operational familiarity with tools and tackles 		4	1	3
	<ul style="list-style-type: none"> be responsible for mobilizing resources 		4	1	3
	<ul style="list-style-type: none"> coordinate with seniors and also monitor with workers/helpers 		3	1	2
	<ul style="list-style-type: none"> use of PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope ,ladder etc. 		3	1	2
			100	30	70
2. PSS/N3008	<ul style="list-style-type: none"> inspect substation equipment, power transformer, distribution 	100	5	2	3
Operation and					

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Maintenance	transformer, switchgear, overhead lines, insulators and other related equipment for identification of faults, possible wear and tear and to assess requirement of proactive preventive maintenance and breakdown maintenance on need basis.			
	<ul style="list-style-type: none"> carry out/monitor/supervise maintenance related activities pertaining to equipment installed in sub stations 	5	2	3
	<ul style="list-style-type: none"> apply understanding of revenue process management viz. release of new connection, meter installation, meter reading, bill generation, bill distribution, revenue collection 	5	2	3
	<ul style="list-style-type: none"> apply understanding of various consumer categories and applicable tariffs 	5	2	3
	<ul style="list-style-type: none"> carry out/Monitor/supervise maintenance of O/H line and U/G cable 	5	2	3
	<ul style="list-style-type: none"> check all the intersections & joints(termination) in the wiring or cable 	5	2	3
	<ul style="list-style-type: none"> check the running parameter of distribution system as per design standard 	5	2	3
	<ul style="list-style-type: none"> monitor working condition of transformer(overloading/under loading) and other equipment 	5	1	4
	<ul style="list-style-type: none"> locate the conduit, cables & other undergoing devices to perform maintenance work 	4	1	3
	<ul style="list-style-type: none"> apply understanding of metering technologies (electronic meter, Automated meter reading, smart meter etc.) 	4	1	3
	<ul style="list-style-type: none"> monitor performace of critical system such as Remote Terminal Units , Remote Metering Units and other automation system 	4	1	3
	<ul style="list-style-type: none"> carry out routine maintenance 	4	1	3
	<ul style="list-style-type: none"> carry out all the testing equipment like tester, multimeter, control cable etc. 	4	1	3
	<ul style="list-style-type: none"> test the system parameter to know abnormal condition of the system 	4	1	3

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	<ul style="list-style-type: none"> test the healthiness of connected equipment 		4	1	3
	<ul style="list-style-type: none"> maintain log of system condition (parameters) 		4	1	3
	<ul style="list-style-type: none"> software upgradation and testing 		4	1	3
	<ul style="list-style-type: none"> carry out repair and replacement of faulty/unhealthy equipment 		4	1	3
	<ul style="list-style-type: none"> troubleshoot faulty system 		4	1	3
	<ul style="list-style-type: none"> upgrade or modify the existing unhealthy equipment/system 		4	1	3
	<ul style="list-style-type: none"> carry out general routine repair work 		4	1	3
	<ul style="list-style-type: none"> implement technical change in equipment/system 		4	1	3
	<ul style="list-style-type: none"> use of PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope ,ladder etc. 		4	1	3
			100	30	70
3. PSS/N2001	<ul style="list-style-type: none"> use protective clothing/equipment for specific tasks and work conditions Protective clothing: leather or asbestos gloves, flame proof aprons, flame proof overalls buttoned to neck, cuffless (without folds), trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors Equipment: hand and face shields, machine guards, residual current devices, shields, dust sheets, respirator 	100	2		2
Use basic health and safety practices for power related work	<ul style="list-style-type: none"> state the name and location of people responsible for health and safety in the workplace 		3	1	2
	<ul style="list-style-type: none"> state the names and location of documents that refer to health and safety in the workplace 		3	1	2
	<ul style="list-style-type: none"> identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards: electrical hazards (dealing with high voltage equipment, power 		2	1	1

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<p>supply and points, loose and naked cables and wires, electrical machines and appliances, etc.); sharp edged and heavy tools; heated metals; oxyfuel and gas cylinders; welding radiation; hazardous surfaces(sharp, slippery, uneven, chipped, broken, etc.); hazardous substances(chemicals, gas, oxy-fuel, fumes, dust, hazardous waste materials, etc.); physical hazards(working at heights, working in windy or moist areas, large and heavy objects and machines, sharp and piercing objects, moving objects and part of machinery, tolls and machines, intense light, load noise, abnormal temperature; obstructions in corridors, by doors, blind turns, over stacked shelves and packages, etc.); working in high temperatures. Possible causes of risk and accident: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness); not taking safety precautions</p>			
<ul style="list-style-type: none"> • follow electrical safe working procedures such as Tag out/Lock out, PTW (Permit To Work), 	3	1	2
<ul style="list-style-type: none"> • follow warning signs (danger, out of service, etc.) while working with electrical systems 	3	1	2
<ul style="list-style-type: none"> • use standard safe working practices when working at heights, confined areas and trenches 	3	1	2
<ul style="list-style-type: none"> • test any electrical equipment and system using insulated testing devices before touching them 	3	1	2
<ul style="list-style-type: none"> • ensure positive isolation of electrical equipment & system as per given standards 	3	1	2
<ul style="list-style-type: none"> • recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed Parameters: temperature, 	3	1	2

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pressure, flow& current			
<ul style="list-style-type: none"> carry out safe working practices while dealing with hazards to ensure the safety of self and others Safe working practices: using protective clothing and equipment; putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; while working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.; safe lifting and carrying practices; use equipment that is working properly and is well maintained; take due measures for safety while working at heights, etc. including safety harness, fall arrestors, guardrails, proper work positioning, do not jump or overload, etc.; take due measures for safety while working in confined spaces or trenches, etc. 	3	1	2
<ul style="list-style-type: none"> state methods of accident prevention in the work environment of the job role Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors 	3	1	2
<ul style="list-style-type: none"> state location of general health and safety equipment in the workplace General health and safety equipment: fire extinguishers; first aid equipment; safety instruments and clothing; safety installations(e.g. fire exits, exhaust fans) 	3	1	2

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<ul style="list-style-type: none"> inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder Faults: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc. Set up: firm/level base, clip/lash down, leaning at the correct angle, appropriate load as per capacity, etc. 	3	1	2
<ul style="list-style-type: none"> lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa 	3	1	2
<ul style="list-style-type: none"> inspect power plant and its equipment routinely for any signs of oil, water and/or steam leakage 	3	1	2
<ul style="list-style-type: none"> store flammable materials and machine lubricating oil safely and correctly 	3	1	2
<ul style="list-style-type: none"> check that the emission and pollution control devices are working properly in line with environmental policy standards 	3	1	2
<ul style="list-style-type: none"> apply good housekeeping practices at all times Good housekeeping practices: clean/tidy work areas, removal/disposal of waste products, protect surfaces 	2		2
<ul style="list-style-type: none"> identify common hazard signs displayed in various areas Various areas: on chemical containers; equipment; packages; inside buildings; in open areas and public spaces, etc. 	3	1	2
<ul style="list-style-type: none"> retrieve and/or point out documents that refer to health and safety in the workplace Documents: fire notices, accident reports, safety instructions for equipment and procedures, company notices and documents, legal documents (e.g. government notices) 	3	1	2
<ul style="list-style-type: none"> inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly 	3	1	2

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<ul style="list-style-type: none"> • use the various appropriate fire extinguishers on different types of fires correctly 	3	1	2
<ul style="list-style-type: none"> • types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids; Class C: e.g. combustible gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class D: combustible chemicals and metals such as magnesium, titanium, and sodium (These fires burn at extremely high temperatures and require special suppression agents) These categories of fires become Class A, B, C and D fires when the electrical equipment that initiated the fire is no longer receiving electricity; Class E: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. 	3	1	2
<ul style="list-style-type: none"> • demonstrate rescue techniques applied during fire hazard 	3	1	2
<ul style="list-style-type: none"> • demonstrate good housekeeping in order to prevent fire hazards 	2		2
<ul style="list-style-type: none"> • demonstrate the correct use of a fire extinguisher. 	3	1	2
<ul style="list-style-type: none"> • demonstrate how to free a person from electrocution 	3	1	2
<ul style="list-style-type: none"> • administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc. 	3	1	2
<ul style="list-style-type: none"> • demonstrate basic techniques of bandaging 	3	1	2
<ul style="list-style-type: none"> • respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments 	3	1	2
<ul style="list-style-type: none"> • perform and organize loss minimization or rescue activity during an accident in real or simulated environments 	2		2
<ul style="list-style-type: none"> • administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of 	3	1	2

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	<p>emergency services in real or simulated cases</p> <ul style="list-style-type: none"> demonstrate the artificial respiration and the CPR Process participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report includes details of: name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified demonstrate correct method to move injured people and others during an emergency 							
			3	1	2			
			1		1			
			1		1			
			1		1			
			100	30	70			
4. PSS/N1336 Work efficiently with others	<ul style="list-style-type: none"> accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt give information to others clearly, at a pace and in a manner that helps them to understand display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible consult with and assist others to maximize effectiveness and efficiency in carrying out tasks display appropriate communication etiquette while working Communication etiquette: do not use abusive language; use appropriate titles and terms of respect; do not 	100	10	3	7			
			10	3	7			
			10	3	7			
			10	3	7			
			10	3	7			
			10	3	7			

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	eat or chew while talking (vice versa) etc.			
	<ul style="list-style-type: none"> display active listening skills while interacting with others at work 	10	3	7
	<ul style="list-style-type: none"> use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism 	10	3	7
	<ul style="list-style-type: none"> demonstrate responsible and disciplined behaviors at the workplace Disciplined behaviors: e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc. 	10	3	7
	<ul style="list-style-type: none"> escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict 	10	3	7
		100	30	70

SECTION 2 EVIDENCE OF LEVEL

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OPTION B

Title/Name of qualification/component: Junior Engineer (JE) -Power Distribution			Level: 5
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	Under limited supervision carry out installation, operation & maintenance, testing & inspection of 33/11 Substation to last mile consumer supply including distribution transformer, Overhead (O/H) Line, Underground (U/G) cabling , Geographic Information System (GIS), Supervisory Control And Data Acquisition (SCADA) system, revenue process management etc. Testing and inspection of distribution system on pre and post commissioning. Carry out operation and maintenance of distribution system- Service cables, meters ,distribution boxes Work requires the ability to perform engineering and coordination activities in the work place. Work also involve bending, walking, and standing for significant periods of time. Candidate will be exposed to different types of power supply areas and irregular terrain. Periodic night-time work is also required.	Job that requires well developed skill, with clear choice of procedures in familiar context And testing and inspection of distribution system on pre and post commissioning. Hence, it qualifies as a Level 5 role. Since it does not involve situation of clear choice, the role does not qualify for Level 4.	5
Professional knowledge	<ul style="list-style-type: none"> • common electricity terminology and correct interpretation of the same • terminology: e.g. Current, Voltage, Resistance, Kilowatt (kw), Kilowatt hour (kwh) • distribution system plant and equipment • entire value chain of distribution system • technical parameter and its function of power distribution equipment • smart grid,AMR,AMI and automation system • metering, billing and collection system also customer care service • importance of reporting problems in a timely manner 	The job holder is expected to have Knowledge of facts, principles, processes and general concepts, in a field of work or study. The role qualifies for Level 5.The job holder is expected to be familiar with all machines and equipment's. He/she is not expected to have ONLY Factual knowledge of field of knowledge or study and technical parameter and its function of power distribution equipment. It cannot be pegged at level 4.	5

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Title/Name of qualification/component: Junior Engineer (JE) -Power Distribution		Level: 5	
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"> • ratings and specifications of cables, fuses, switches and wires • handling all machineries, equipment & vehicles • appropriate judgment and initiative pertaining to work methods and tools • technical manuals, blueprints, schematics, diagrams, plans, specifications • estimate time, material and equipment needed to complete assignments • quality parameters, quality assessment based on physical parameters • metering system and its installation • service line connection process 		
Professional skill	<ul style="list-style-type: none"> • follow organization rule-based decision making process • take decisions with systematic course of actions and/or response • planning and organization of tasks to meet deadlines • record keeping, documentation • build customer relationships and use customer centric approach • seek and comprehend operation related inputs for clarification • find ways of modifying difficult operating stages to make it operation friendly • apply domain information to set and define operation parameters that ensures economy and quality of the product • critically evaluate operation parameters in relation to product features intended 	The job holder is expected to have a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information and planning and organization of tasks to meet deadlines, the role qualifies for Level 5.	5

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Title/Name of qualification/component: Junior Engineer (JE) -Power Distribution		Level: 5	
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"> develop a holistic and comprehensive profile of products based on segregated discrete process stages 		
Core skill	<ul style="list-style-type: none"> apply understanding of power distribution system apply knowledge of type of distribution systems with respect to voltage level, network configuration (ring main/redial etc.) apply understanding of cables/conductors their size and specifications carry out erection and commissioning of substation carry out the route survey for O/H line or U/G cable distribution supply carry out installation of distribution transformer supervise erection of line poles, substation, O/H line or U/G cable, switchgear etc plan and execute service line connection for customers ensure that all the tools & equipment needed for erection or installation are available at site undertake meter installation at customer premises apply knowledge of SCADA and GIS Mapping ensure proper earthing of equipment for healthy operation undertake installation of protection devices- surge protection device, over voltage protection etc. read and understand network schematic, line diagrams and related technical drawings coordinate and manage all the logistics, material planning and handling related issues monitor power supply from substation during work in progress test and inspect transformer, switchgear etc. on post commissioning 	<p>The job holder is expected to have Desired mathematical skill; understanding of social, political; and some skill of collecting and organising information, communication and plan and execute service line connection for customers. The role qualifies for Level 5.</p>	5

NSQF QUALIFICATION FILE GUIDANCE

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Title/Name of qualification/component: Junior Engineer (JE) -Power Distribution		Level: 5	
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"> • have operational familiarity with tools and tackles • be responsible for mobilizing resources • coordinate with seniors and also monitor with workers/helpers • use of PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope ,ladder etc. • inspect substation equipment, power transformer, distribution transformer, switchgear, overhead lines, insulators and other related equipment for identification of faults, possible wear and tear and to assess requirement of proactive preventive maintenance and breakdown maintenance on need basis. • carry out/monitor/supervise maintenance related activities pertaining to equipment installed in sub stations • apply understanding of revenue process management viz. release of new connection, meter installation, meter reading, bill generation, bill distribution, revenue collection • apply understanding of various consumer categories and applicable tariffs • carry out/monitor/supervise maintenance of O/H line and U/G cable • check all the intersections & joints(termination) in the wiring or cable • check the running parameter of distribution system as per design standard • monitor working condition of transformer(overloading/under loading) and other equipment • locate the conduit, cables & other undergoing devices to perform maintenance work 		

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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"> • apply understanding of metering technologies (electronic meter, Automated meter reading, smart meter etc.) • monitor performance of critical system such as Remote Terminal Units , Remote Metering Units and other automation system • carry out routine maintenance • carry out all the testing equipment like tester, multimeter, control cable etc. • test the system parameter to know abnormal condition of the system • test the healthiness of connected equipment • maintain log of system condition (parameters) • undertake software upgradation and testing • carry out repair and replacement of faulty/ unhealthy equipment • troubleshoot faulty system • upgrade or modify the existing unhealthy equipment/system • carry out general routine repair work • implement technical change in equipment/system • use of PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope ,ladder etc. 		
Responsibility	Responsibility for own work and learning and some responsibility for other's works and learning	The job holder is expected to take up Responsibility for own work and learning and some responsibility for others' works and, implement technical change in equipment/system.	5

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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

While collecting data from secondary sources (Details mentioned in the attached skill gap report) and industry representatives, which was collected with respect to roles for which qualification packs development, was to be prioritized. This was largely based on dominant roles in the sector, volume of people required, quantitative and qualitative shortfall which the Industry feels they face. Governing council of PSSC gave final approval and endorsement for the same. Estimated demand for the qualification:32,994

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

Internal Skills Gap analysis Reports for industry demand and secondary research data, though these do not lend to accurate demand projection. These include CEA and 12th plan reports.

- Feedback from industry for demand though again sample size may not lend to accurate figures
- Training duration, and current and potential training capacity envisaged

An LMS development initiative is being put in place to be more precise regarding the demand and supply

An RFP is being issued for a more detailed occupational map and skills gap study and will be used to further provide information regarding the same.

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
- A formal review is scheduled in two year time (2018)

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.

- Report to the Governing Council
- Minutes of the meeting of GC meetings
- Power Sector Skill Council Skill Gap Report

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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 Engineer- Power 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.

Detailed Occupation Mapping for Distribution Subsector

