

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR POWER SECTOR

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding



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Introduction

Qualifications Pack: Assistant Technician -Street Light Installation & Maintenance

SECTOR: Power

SUB-SECTOR: Distribution

OCCUPATION: Assistant Technician -Street Light Installation & Maintenance

REFERENCE ID: PSS/Q6003

ALIGNED TO: NCO-2004/NIL

Assistant Technician -Street Light Installation & Maintenance is responsible for installation, testing, commissioning, operation & maintenance of streetlight network including pole, fixtures, cables, junction boxes, feeder pillars and other associated accessories.

Brief Job Description: Under supervision, provides specialized electrical services in the installation, operation and maintenance of street lighting and other related equipment in the city, and performs related duties as assigned.

Personal Attributes: Work is performed outdoors in all weather conditions and requires availability in the event of emergency situations. Work requires the ability to lift large heavy objects poles and perform strenuous physical labor. Work requires bending, climbing, pulling, carrying, kneeling, walking, and standing for significant periods of time. Work involves exposure to excessive noise, and irregular terrain. Periodic night-time work is required.

Job Details	Qualifications Pack Code	PSS/Q6003		
	Job Role	Assistant Technician -Street Light Installation & Maintenance		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Power	Drafted on	15/01/2016
	Sub-sector	Distribution	Last reviewed on	19/07/2016
	Occupation	Technician	Next review date	19/07/2018
	NSQC Clearance Date	Not Applicable		

Job Role	Assistant Technician -Street Light Installation & Maintenance
Role Description	Assistant Technician -Street Light Installation & Maintenance is responsible for installation, testing, commissioning and operation & maintenance of street light network including pole, fixtures, cables, junction boxes, feeder pillars and other associated accessories.
NSQF level	3
Minimum Educational Qualifications	10 th Pass
Maximum Educational Qualifications	Not Applicable
Training (Suggested but not mandatory)	Not Applicable
Minimum Job Entry Age	18 Years
Experience	Prior experience in street lighting preferable
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> PSS/N6007 Installation PSS/N6008 Operation & Maintenance PSS/N2001 Use basic health and safety practices as the workplace PSS/N1336 Work effectively with others Optional: Not Applicable
Performance Criteria	As described in the relevant OS units

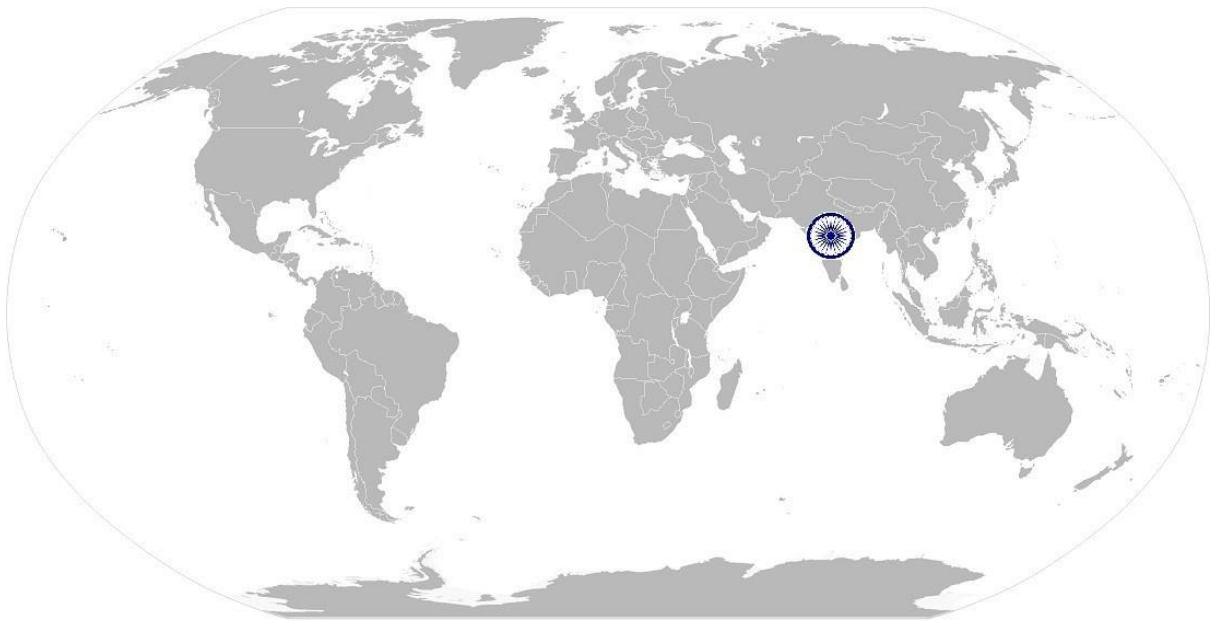
Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-functions	Sub-functions are sub-activities essential achieving the objectives of the function.
Job role	Job role defines unique set of functions that together form a unique employment opportunity in an organization.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve consistently while carrying out a function at the workplace. Occupational Standards as set of competencies is applicable both in Indian and overreaching global contexts.
Performance Criteria	Performance Criteria defined for a task are statements that together specify the standard of performance while carrying out the task.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack(QP)	Qualifications Pack comprises set of OS, together with the educational, training and other criteria that are required to perform a job role satisfactorily at workplace. A Qualifications Pack is assigned a unique qualification pack code for clear identification.
Knowledge and Understanding	Knowledge and Understanding are statements which together as a set specify the technical, generic, professional and organization specific knowledge that an individual needs to possess in order to perform and meet the required standards consistently.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates. It includes elements of operational knowledge contents defined in relation to functioning of an organization that a skilled professional need to possess specific to its precise areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific domain knowledge needed to accomplish the task in combination with other competencies. It is usually coined with specifically

	designated roles and responsibilities.
Core Skills/Generic Skills	Core Skills or Generic Skills as set are group of skills. It is key to working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include mainly communication related skills that are applicable to most job roles.

Acronyms	Keywords /Terms	Description
	CPR	Cardiopulmonary Resuscitation
	KV	Kilo Volt
	KW	Kilowatt
	KWH	Kilo Watt Hour
	PPE	Personal Protective Equipment
	PTW	Permit to work
	JB	Junction Box
	KVA	Kilo Volt Ampere

National Occupational Standard



Overview

This unit is about the Installation activities performed by an Assistant Street Light Technician

PSS/N6007

Installation

National Occupational Standard

Unit Code	PSS/N6007
Unit Title (Task)	Installation
Description	Assistant Technician -Street Light Installation & Maintenance must ensure the proper installation/erection of street light pole, fixtures and wirings/cable as per the company standards & IS
Scope	This unit/task covers the following: <ul style="list-style-type: none"> street light installation laying the underground cable
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Street Light Installation	<p>The user/individual on the job needs to :</p> <p>PC1. demonstrate understanding of all type lighting devices including LED light – Wattage wise and Lumen level wise in detail</p> <p>PC2. demonstrate full knowledge and ensure application of technical specification of various type of LED street lights while carrying out job</p> <p>PC3. carry out the root survey before street light pole installation and cable laying</p> <p>PC4. carry all the tools & equipment needed for erection or installation</p> <p>PC5. ensure proper wiring and connection for erection of street light fixture</p> <p>PC6. ensure installation of protection devices- surge protection device, voltage fluctuation, over voltage protection etc.</p> <p>PC7. ensure setting of control switch and time for automatic switch off and switch on</p> <p>PC8. replace and retrofit the existing light with modern LED light</p> <p>PC9. check and replace street light component and drivers</p> <p>PC10. be able to give street light supply from distribution transformer</p> <p>PC11. ensure required Personal Protective Equipment for the safety measures</p> <p>PC12. test light fixture and drivers, prior to installation</p> <p>PC13. develop complete operational familiarity with tools and tackles</p>
Laying the underground cable	<p>The user/individual on the job needs to:</p> <p>PC14. Develop familiarity and ensure fixing of various types of underground cable (3 Core) for street light</p> <p>PC15. ensure supply connection from cable to fixture with proper earthing and transformer load balancing</p> <p>PC16. carry all the tools and equipment for digging and laying down the cable</p> <p>PC17. troubleshoot problems involving underground electrical wiring</p> <p>PC18. Develop familiarity and ensure proper use of the ratings and specifications of cables, fuses, switches and wires</p> <p>PC19. report to supervisor or engineer any problem if needed in laying down the wiring</p> <p>PC20. check and perform primary testing on the cables and connections of street light</p>

PSS/N6007

Installation

Knowledge and Understanding (K)

A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the organisation relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. relevant people and their responsibilities within the work area</p> <p>KA8. escalation matrix and procedures for reporting work and employment related issues</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. common electricity terminology & correct interpretation of the same terminology: e.g. current, voltage, resistance, kilowatt (kw), kilowatt hour(kwh)</p> <p>KB2. types of LED fixture- wattage wise and lumen level wise of street light</p> <p>KB3. the technical specification of LED lights and associated components</p> <p>KB4. various type of protection driver/device – surge protection, voltage fluctuation , over voltage etc.</p> <p>KB5. wiring diagrams of LED street light</p> <p>KB6. possess knowledge of technical specification and types of fixture viz sodium vapour lamp, CFL, Halogen, LED, Mercury lamp etc</p> <p>KB7. the cabling system for LED street light</p> <p>KB8. the various types/heights of LED street light poles</p> <p>KB9. control switch and timer of automatic operation</p> <p>KB10. operational knowledge of lux meter and multimeter and other testing equipment</p> <p>KB11. importance of reporting problems and resolving in a timely manner</p> <p>KB12. ratings and specifications of cables, fuses, switches and wires</p> <p>KB13. skills in handling all machineries, equipment & vehicles</p> <p>KB14. appropriate judgment and initiative pertaining to work methods and tools</p> <p>KB15. technical manuals, blueprints, schematics, diagrams, plans, specifications,</p> <p>KB16. how to estimate time, material and equipment needed to complete assignments</p> <p>KB17. standard procedures how to deal with electric shocks and electrocutions to rescue and minimize damage and harm</p> <p>KB18. quality parameters, quality assessment based on physical parameters</p> <p>KB19. apply knowledge about the types/height of street light pole</p> <p>KB20. apply knowledge of process of laying cable and termination</p>

PSS/N6007

Installation

Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor or engineer SA2. note down observations (if any) related to the process
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. read and interpret the process required for various types of operations SA4. read and interpret and process flowchart for all operations SA5. read manuals and operation documents to understand the equipment used in operations
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. discuss task lists, schedules and activities with the supervisor SA7. effectively communicate with the team members/co-workers SA8. communicate clearly with the customer on the issues faced during query/fault
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. follow organization rule-based decision making process in consultation of the supervisor SB2. take decision with systematic course of actions and/or response
	Plan and Organize
	The user/individual on the job needs to know and understand: SB3. planning and organization of tasks to meet timelines SB4. able to prepare estimates in consultation with supervisor
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB5. build customer relationships and use customer centric approach
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB6. seek and comprehend operation related inputs for clarification SB7. find ways of modifying difficult operating stages to make it operation friendly
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. apply domain information to set and define operation parameters that ensures economy and quality of the product
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB9. critically evaluate operation parameters in relation to product features intended SB10. develop a holistic and comprehensive profile of products based on segregated discrete process stages

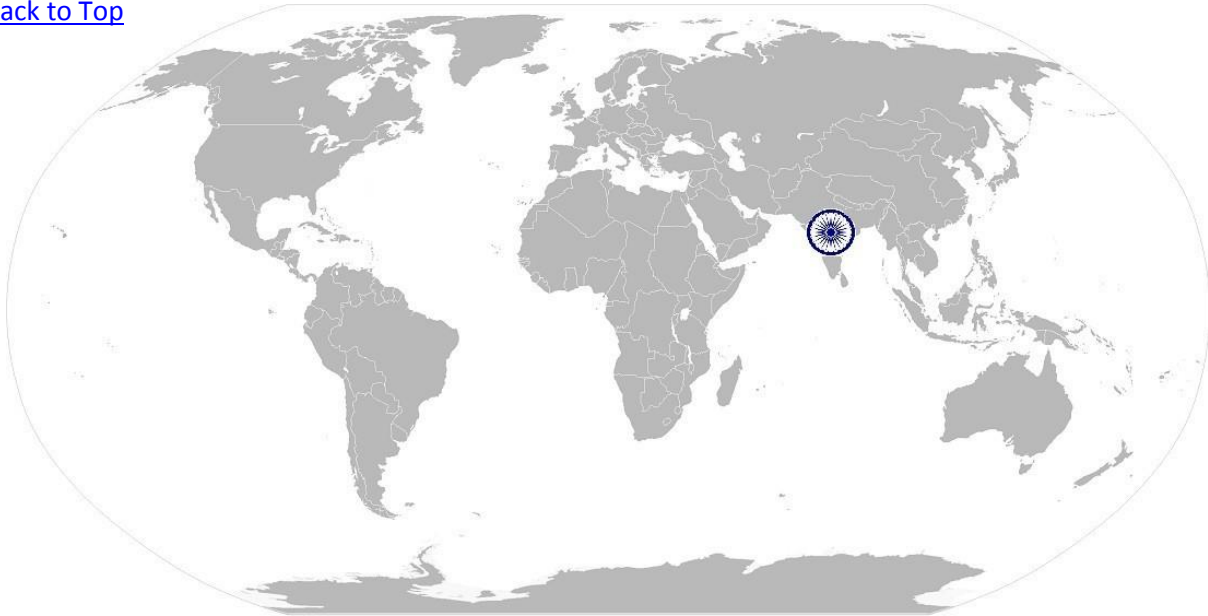
PSS/N6007

Installation

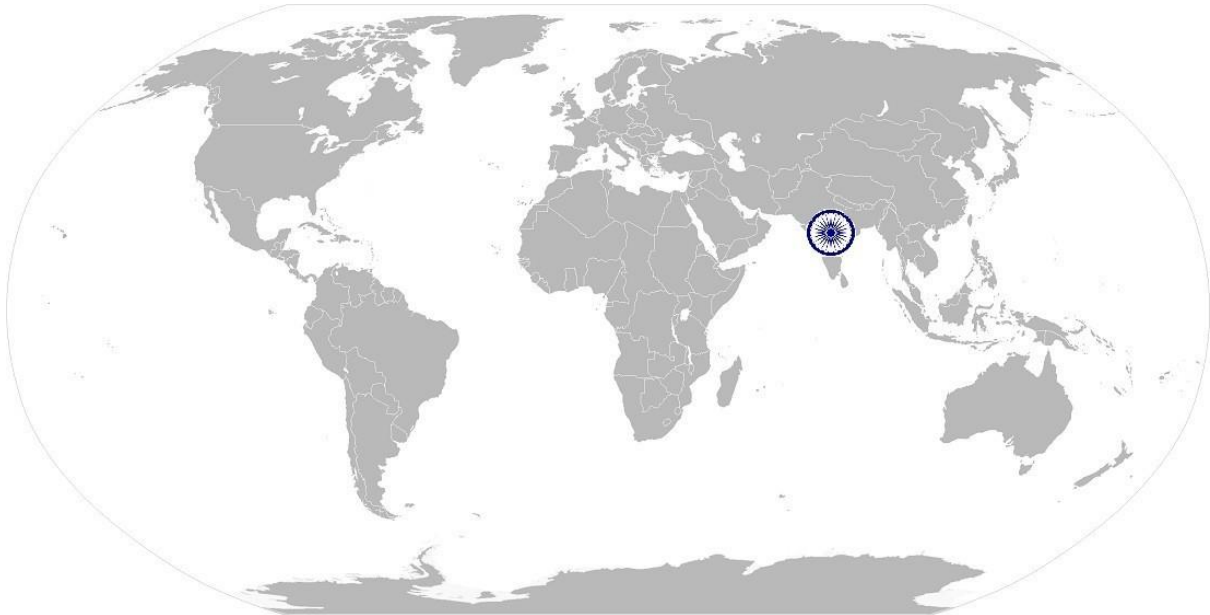
NOS Version Control

NOS Code	PSS/N6007		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	15/01/2016
Industry Sub-sector	Distribution	Last reviewed on	19/07/2016
Occupation	Assistant Technician	Next review date	19/07/2018

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National Occupational Standard



Overview

This unit is about the operation and maintenance work of street light system.

PSS/N6008

Operation and Maintenance

National Occupational Standard	Unit Code	PSS/N6008
	Unit Title (Task)	Operation and Maintenance
	Description	This section covers the operation and maintenance duties of assistant street light technician like repair & maintenance, replacing of street lights and associated components etc.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> primary inspection for maintenance testing of the system repairing and replacement
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Primary Inspection for maintenance	<p>The user/individual on the job needs to :</p> <p>PC1. check all the intersections, joints, junction box in the wiring or cable of LED, street light and other lighting devices</p> <p>PC2. check the ON-OFF switch/MCB</p> <p>PC3. check visually the LED bulb and head of street light</p> <p>PC4. locate the conduit, cables & other undergoing devices to perform maintenance work</p> <p>PC5. check lux level</p>
	Testing of the system	<p>The user/individual on the job needs to :</p> <p>PC6. carry all the testing equipment like tester, multimeter, lux meter, wire, bulb etc.</p> <p>PC7. test the supply across the ON-OFF switch and across the all joints and intersections</p> <p>PC8. check continuity of cable</p> <p>PC9. test the lamp head by multimeter or tester for checking the continuity of supply</p> <p>PC10. test the fixture and other parts of street light system</p>
	Repairing & replacement	<p>The user/individual on the job needs to :</p> <p>PC11. maintain and repair or replace photoelectric control relay and surge protection device for lighting system</p> <p>PC12. replace existing light with modern LED light and associated component</p> <p>PC13. troubleshoot problems involving underground electrical wiring</p> <p>PC14. repair, replace and modify street light equipment including heads, poles, controllers, lights, circuitry, switches, fuses, and cabinet parts</p> <p>PC15. assist in general electrical repair work</p> <p>PC16. help repair other electronic or electrical devices or equipment</p>
	Knowledge and Understanding (K)	

PSS/N6008

Operation and Maintenance

A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the organisation relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements</p> <p>KA4. reporting structure, inter-dependent functions, lines & procedures in the work</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and ser requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. escalation matrix and procedures for reporting work and employment related issues</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. common electricity terminology and correct interpretation of the same terminology: e.g. current, voltage, resistance, kilowatt (kw), kilowatt hour(kwh)</p> <p>KB2. types of LED fixture- wattage wise and lumen level wise of street light</p> <p>KB3. the technical specification of LED lights and associated components</p> <p>KB4. various types of protection driver/device – surge protection, voltage fluctuation , over voltage etc.</p> <p>KB5. the cabling system for LED street light</p> <p>KB6. the various types/heights of LED street light poles</p> <p>KB7. control switch and timer of automatic operation</p> <p>KB8. operational knowledge of lux meter, multimeter and other testing equipment</p> <p>KB9. how to interpret wiring diagrams</p> <p>KB10. importance of reporting problems and resolving in a timely manner</p> <p>KB11. ratings and specifications of cables, fuses, switches and wires,street light lift</p> <p>KB12. how to take appropriate judgment and initiative pertaining to work methods and tools</p> <p>KB13. technical manuals, blueprints, schematics, diagrams, plans, specifications estimate time, material and equipment needed to complete assignments</p> <p>KB14. lux level measurement procedure.</p> <p>KB15. recommended levels of illumination on various group/type of roads.</p> <p>KB16. troubleshooting for non working of fixture.</p> <p>KB17. troubleshooting of fixture failure</p>
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. note the information communicated by the supervisor or engineer</p>

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Operation and Maintenance

	SA2. note down observations (if any) related to the process
	Reading Skills
	The user/individual on the job needs to know and understand how to:
	SA3. read and interpret the process required for various types of operations
	SA4. read and interpret and process flowchart for all operations
B. Professional Skills	SA5. read manuals & operation documents to understand the equipment used into operation
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA6. discuss task lists, schedules and activities with the supervisor
	SA7. effectively communicate with the team members
	SA8. communicate clearly with the customer on the issues faced during query/fault
	Decision Making
	The user/individual on the job needs to know and understand how to:
	SB1. follow organization rule-based decision making process in consultation with supervisor
	SB2. take decision with systematic course of actions and/or response in consultation with supervisor
	Plan and Organize
	The user/individual on the job needs to know and understand:
	SB3. planning and organization of tasks to meet timelines
	Customer Centricity
	The user/individual on the job needs to know and understand how to:
	SB4. build customer relationships and use customer centric approach
	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB5. seek and comprehend operation related inputs for clarification
	SB6. find ways of modifying difficult operating stages to make it operation friendly
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB7. apply domain information to set and define operation parameters that ensures economy and quality of the product in consultation with supervisor
	Critical Thinking
	The user/individual on the job needs to know and understand how to:
	SB8. critically evaluate operation parameters in relation to product features intended
	SB9. develop holistic and comprehensive profile of products based on segregated discrete process stages of blank forming processes

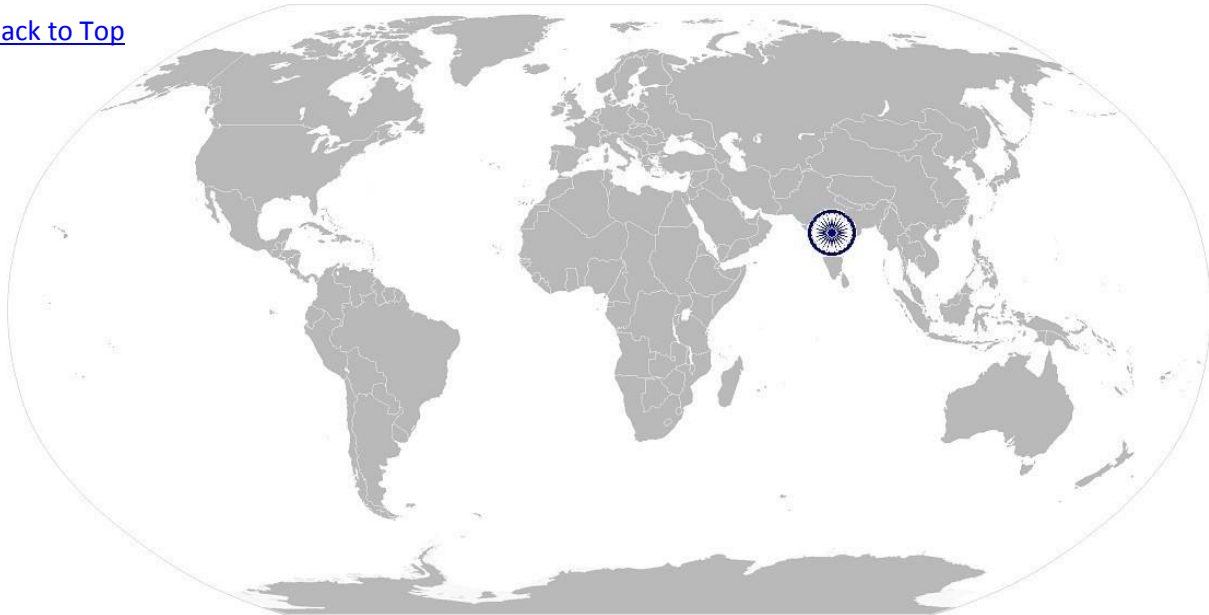
PSS/N6008

Operation and Maintenance

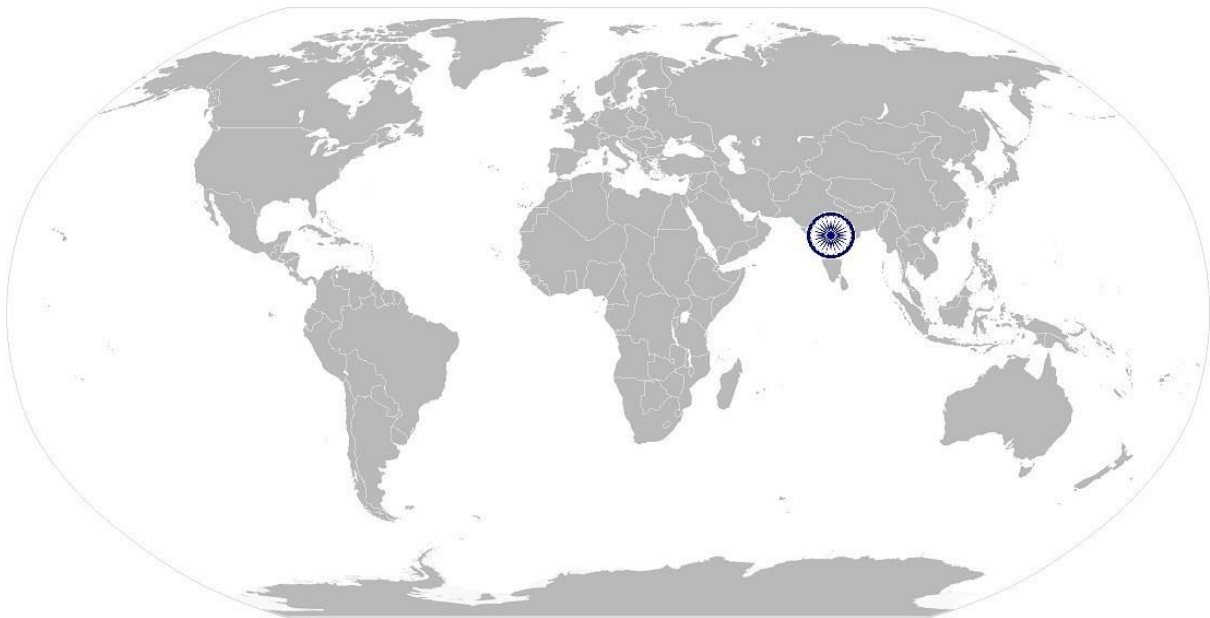
NOS Version Control

NOS Code	PSS/N6008		
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Industry	Power	Drafted on	15/01/2016
Industry Sub-sector	Distribution	Last reviewed on	19/07/2016
Occupation	Technician	Next review date	19/07/2018

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National Occupational Standard



Overview

This unit covers health, safety and security for power related work. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.

PSS/N2001

Use basic health and safety practices for power related work

National Occupational Standard	Unit Code	PSS/N2001
	Unit Title (Task)	Use basic health and safety practices for power related work
	Description	This unit covers health, safety and security for power related work. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment. It covers responsibilities towards self, others, assets and the environment. .
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • health and safety • fire safety • emergencies, rescue and first-aid procedures
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Health and safety	<p>The user/individual on the job needs to:</p> <p>PC1. use protective clothing/equipment for specific tasks and work conditions.</p> <p>PC2. state the name and location of people responsible for health and safety in the workplace</p> <p>PC3. state the names and location of documents that refer to health and safety in the workplace</p> <p>PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace</p> <p>PC5. follow electrical safe working procedures such as Tag out/Lock out and display PTW (Permit To Work),</p> <p>PC6. follow warning signs (danger, out of service, etc.) while working with electrical systems</p> <p>PC7. use standard safe working practices when working at heights, confined areas and trenches</p> <p>PC8. test any electrical equipment and system using insulated testing devices before touching them</p> <p>PC9. ensure positive isolation of electrical equipment & system as per given standards</p> <p>PC10. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed</p> <p>PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others</p> <p>PC12. state methods of accident prevention in the work environment of the job role</p> <p>PC13. state location of general health and safety equipment in the workplace</p> <p>PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder</p> <p>PC15. lift,carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa</p> <p>PC16. inspect Grid station and its equipment routinely for any signs of oil and water</p>

PSS/N2001

Use basic health and safety practices for power related work

	<p>leakage</p> <p>PC17. store flammable materials and machine lubricating oil safely and correctly</p> <p>PC18. check that the emission and pollution control devices are working properly in line with environmental policy standards</p> <p>PC19. apply good housekeeping practices at all times</p> <p>PC20. identify common hazard signs displayed in various areas</p> <p>PC21. retrieve and/or point out documents that refer to health and safety in the workplace</p> <p>PC22. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly</p>
Fire safety	<p>The user/individual on the job needs to:</p> <p>PC23. use the various appropriate fire extinguishers on different types of fires correctly</p> <p>PC24. distinguish types of fire</p> <p>PC25. demonstrate rescue techniques applied during fire hazard</p> <p>PC26. demonstrate good housekeeping in order to prevent fire hazards</p> <p>PC27. demonstrate the correct use of a fire extinguisher</p>
Emergencies, rescue and first-aid procedures	<p>The user/individual on the job needs to:</p> <p>PC28. demonstrate how to free a person from electrocution</p> <p>PC29. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC30. demonstrate basic techniques of bandaging</p> <p>PC31. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC32. perform and organize loss minimization or rescue activity during an accident in real or simulated environments</p> <p>PC33. 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</p> <p>PC34. demonstrate the artificial respiration and the CPR Process</p> <p>PC35. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work</p> <p>PC36. complete a written accident/incident report or dictate a report to another person, and send report to person responsible</p> <p>PC37. demonstrate correct method to move injured people and others during an emergency</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace.</p> <p>KA2. names and location of documents that refer to health and safety in the workplace.</p>

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Use basic health and safety practices for power related work

B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. meaning of “hazards” and “risks”</p> <p>KB2. health and safety hazards commonly present in the work environment and related precautions</p> <p>KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB4. possible causes of risk and accident</p> <p>KB5. methods of accident prevention</p> <p>KB6. safe working practices when working with tools and machines</p> <p>KB7. safe working practices while working at various hazardous sites</p> <p>KB8. where to find all the general health and safety equipment in the workplace</p> <p>KB9. various dangers associated with the use of electrical equipment</p> <p>KB10. positive isolation of electrical equipment and system</p> <p>KB11. safe handling and disposal of hazardous power plant wastes</p> <p>KB12. use of emission and pollution control devices and measures taken to control pollution</p> <p>KB13. various safety procedures and equipment used to work at heights, trenches and confined places</p> <p>KB14. safe working practices specific to working with electrical equipment & system e.g. lock out/ tag out, PTW, etc.</p> <p>KB15. preventative and remedial actions to be taken in the case of exposure to toxic materials</p> <p>KB16. importance of using protective clothing/equipment and other insulated work gear while handling electrical system and equipment</p> <p>KB17. precautionary activities taken to prevent fire accident</p> <p>KB18. various causes of fire</p> <p>KB19. techniques of using the different fire extinguishers</p> <p>KB20. different methods of extinguishing fire</p> <p>KB21. different materials used for extinguishing fire</p> <p>KB22. emergency rescue techniques applied during a fire hazard</p> <p>KB23. various types of safety signs and what they mean</p> <p>KB24. appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. note the information communicated by the officer incharge.</p> <p>SA2. note down observations (if any) related to the operation/maintenance.</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret the process required for different types of manuals for maintenance.</p>

PSS/N2001

Use basic health and safety practices for power related work

	SA4. read and interpret the flowchart of all parts of an assembly.
	SA5. read manuals and documents to understand the product-details & how they can be used.
	Oral Communication (Listening and Speaking skills)
B. Professional Skills	The user/individual on the job needs to know and understand how to:
	SA6. discuss task lists, schedules and activities with the colleague/supervisor.
	SA7. effectively communicate with the team members.
	SA8. attentively listen and comprehend the information given by the colleague/supervisor/contractor.
	SA9. communicate clearly with the colleague on the issues faced during query/fault.
	Decision Making
	The user/individual on the job needs to know and understand how to:
	SB1. follow colleague/contractor rule-based decision making process.
	SB2. take decisions with systematic course of actions and/or response.
	Plan and Organize
	The user/individual on the job needs to know and understand:
	SB3. planning and organization of tasks to meet deadlines.
	Customer Centricity
	The user/individual on the job needs to know and understand how to:
	SB4. build customer relationships and use customer centric approach.
	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB5. seek and comprehend operation related inputs for clarification
	SB6. find ways of modifying difficult operating stages to make it operation friendly
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB7. work systematically and logically to resolve the issues and identify causation and anticipate unexpected results.
	SB8. quick approach and solution towards faults repairing.
	Critical Thinking
	The user/individual on the job needs to know and understand how to:
	SB9. critically evaluate operation parameters in relation to system normality
	SB10. develop a holistic and comprehensive profile of grid station on segregated discrete process stages of blank forming processes

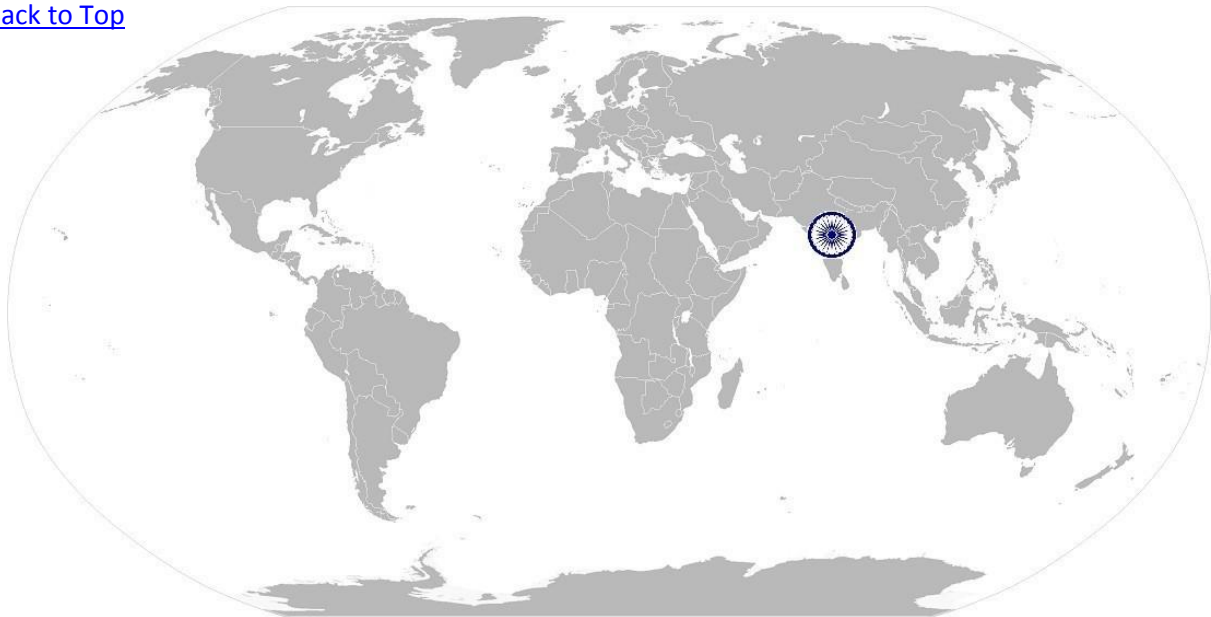
PSS/N2001

Use basic health and safety practices for power related work

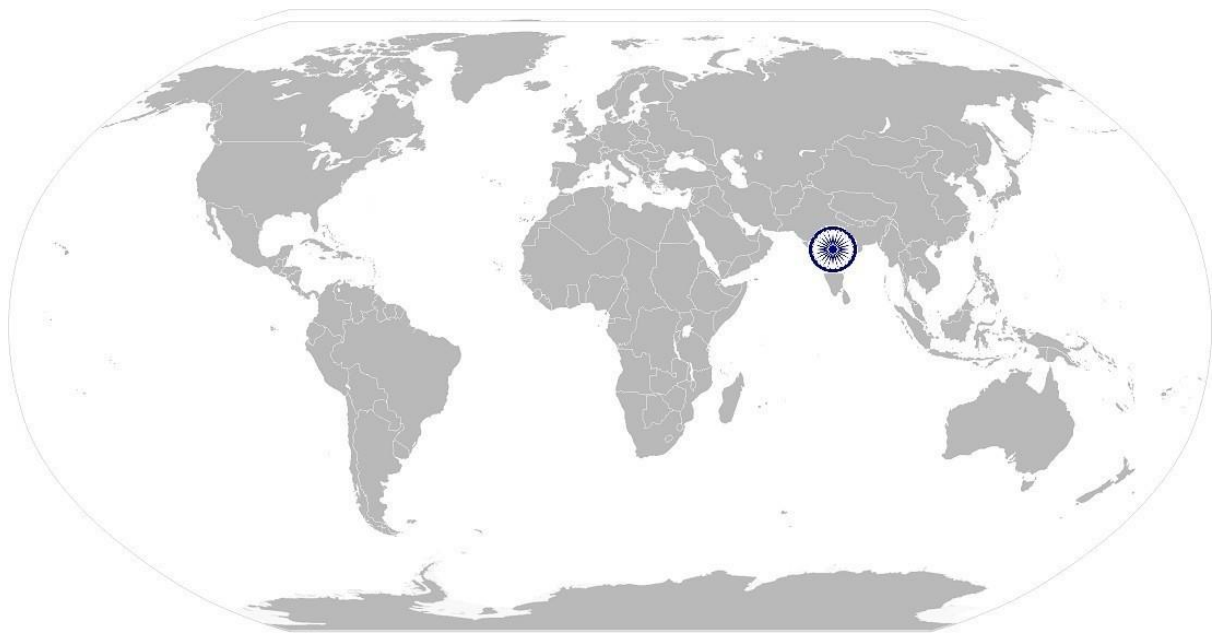
NOS Version Control

NOS Code	PSS/N2001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	04/06/2016
Industry Sub-sector	Generation, Transmission & Distribution	Last reviewed on	19/07/2016
Occupation	Technician	Next review date	19/07/2018

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National Occupational Standard



Overview

This unit covers basic practices that improve effectiveness of working with others in an organizational set-up

PSS/N1336

Work effectively with other

National Occupational Standard

Unit Code	PSS/N1336
Unit Title (Task)	Work effectively with others
Description	<p>This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace.</p> <p>These cover areas such as communication etiquette, discipline, listening, handling conflict and grievances.</p>
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> working with others
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Working with others	<p>The user/individual on the job should be able to:</p> <p>PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. display appropriate communication etiquette while working .</p> <p>PC7. display active listening skills while interacting with others at work</p> <p>PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. demonstrate responsible and disciplined behavior at the workplace</p> <p>PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. legislation, standards, policies, and procedures followed in the organisation relevant to own employment and performance conditions</p> <p>KA2. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA3. relevant people and their responsibilities within the work area</p> <p>KA4. escalation matrix and procedures for reporting work and employment related issues</p>

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Work effectively with other

B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. various categories of people that one is required to communicate and co-ordinate with in the organization</p> <p>KB2. importance of effective communication in the workplace</p> <p>KB3. importance of teamwork in organizational and individual success</p> <p>KB4. various components of effective communication</p> <p>KB5. key elements of active listening</p> <p>KB6. value and importance of active listening and assertive communication</p> <p>KB7. barriers to effective communication</p> <p>KB8. importance of tone and pitch in effective communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer</p> <p>KB11. importance of ethics for professional success</p> <p>KB12. importance of discipline for professional success</p> <p>KB13. what constitutes disciplined behavior for a working professional</p> <p>KB14. common reasons for interpersonal conflict</p> <p>KB15. importance of developing effective working relationships for professional success</p> <p>KB16. how to express and address grievances appropriately and effectively</p> <p>KB17. importance and ways of managing interpersonal conflict effectively</p>
Skills (S) (Optional)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. note the information communicated by the officer incharge.</p> <p>SA2. note down observations (if any) related to the operation/maintenance.</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret the process required for different types of manuals</p> <p>SA4. read and interpret the flowchart of all parts of an assembly.</p> <p>SA5. read manuals and documents to understand the product-details & how they can be used.</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. discuss task lists, schedules and activities with the colleague/supervisor.</p> <p>SA7. effectively communicate with the team members.</p> <p>SA8. attentively listen and comprehend the information given by the colleague/supervisor/contractor.</p> <p>SA9. communicate clearly with the colleague on the issues faced during query/fault.</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. follow colleague/contractor rule-based decision making process.</p>

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Work effectively with other

	SB12. take decisions with systematic course of actions and/or response.
	Plan and Organize
	The user/individual on the job needs to know and understand: SB13. planning and organization of tasks to meet deadlines.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB14. build customer relationships and use customer centric approach.
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB15. seek and comprehend operation related inputs for clarification find ways of modifying difficult operating stages to make it operation friendly
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB16. work systematically and logically to resolve the issues and identify causation and anticipate unexpected results.quick approach and solution towards faults repairing.
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB17. critically evaluate operation parameters in relation to system normality develop a holistic and comprehensive profile of grid station on segregated discrete process stages of blank forming processes

NOS Version Control

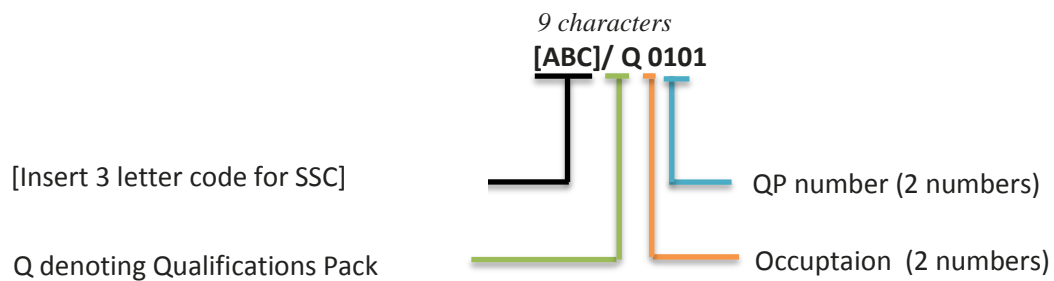
NOS Code	PSS/N1336		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	04/06/2016
Industry Sub-sector	Generation, Transmission & Distribution	Last reviewed on	19/07/2016
Occupation	Technician	Next review date	19/07/2018

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Annexure

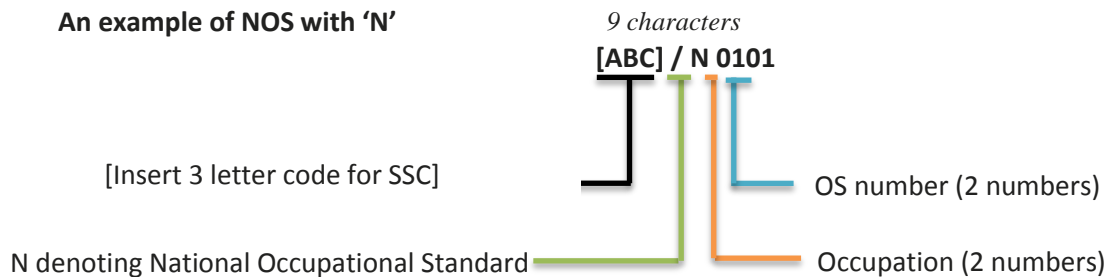
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
[Insert Name of Sub-sector1, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector2, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector3, Font: Calibri (Body), size 11, Bold]	[Insert range]
[Insert Name of Sub-sector4, Font: Calibri (Body), size 11, Bold]	[Insert range]
...	...

Sequence	Description	Example
Three letters	Industry name	[ABC, Font: Calibri (Body), size 11]
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Assistant Technician -Street Light Installation & Maintenance

Qualification Pack PSS/Q6003

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

Assessable Outcomes	Assessment Criteria for Outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. PSS/N6007 Installation	PC1. apply understanding of all type of LED light – Wattage wise and Lumen level wise in detail		4	1	3
	PC2. apply knowledge of technical specification of various type of LED street lights		4	1	3
	PC3. carry out the root survey before street light pole installation and cable laying		4	2	2
	PC4. carry all the tools & equipment needed for erection or installation		2	0	2
	PC5. ensure proper wiring and connection for erection of street light fixture		5	2	3
	PC6. ensure installation of protection devices- surge protection device, voltage fluctuation, over voltage		3	0	3

Assessment Criteria

	protection etc.				
	PC7. apply knowledge of control switch and time for automatic switch off and switch on		3	0	3
	PC8. apply knowledge about the types/height of street light pole		5	2	3
	PC9. replace and retrofit the existing light with modern LED light		4	1	3
	PC10. check and replace street light component and drivers		5	2	3
	PC11. be able to give street light supply from distribution transformer		4	2	2
	PC12. ensure required PPE for the safety measures		4	0	4
	PC13. test light fixture and drivers, prior to installation		4	0	4
	PC14. apply operational familiarity with tools and tackles		4	0	4
	PC15. apply knowledge of types of underground cable (3 Core) for street light		5	2	3
	PC16. apply knowledge of process of laying cable and termination		4	0	4
	PC17.				
	PC18. ensure supply connection from cable to fixture with proper earthing and transformer load balancing		4	0	4
	PC19. carry all the tools and equipment for digging and laying down the cable		5	2	3
	PC20. troubleshoot problems involving underground electrical wiring		4	1	3
	PC21. apply knowledge about the ratings and specifications of cables, fuses,		2	1	1

Assessment Criteria

	switches and wires				
	PC22. report to supervisor or engineer (if found) any problem in laying down the wiring		2	1	1
	PC23. check and perform primary testing on the cables and connections of street light		2	1	1
			100	22	78
2. PSS/N6008 Operation & Maintenance	PC1. check all the intersections, joints, junction box in the wiring or cable of LED street light		3	1	2
	PC2. check the ON-OFF switch/MCB		2	1	1
	PC3. check visually the LED bulb and head of street light		2	0	2
	PC4. locate the conduit, cables & other undergoing devices to perform maintenance work		2	1	1
	PC5. checking lux level		2	1	1
	PC6. carry all the testing equipment like tester, multimeter, lux meter, wire, bulb etc.		2	1	1
	PC7. test the supply across the ON-OFF switch and across the all joints and intersections		2	0	2
	PC8. check continuity of cable		3	1	2
	PC9. test the lamp head by multimeter or tester for checking the continuity of supply		1	0	1
	PC10. test the fixture and other parts of street light system		1	0	1
	PC11. maintain and repair or replace photoelectric control relay and surge protection device for lighting system		1	0	1
	PC12. replace existing light with modern		3	1	2

Assessment Criteria

	LED light and associated component				
	PC13. troubleshoot problems involving underground electrical wiring		1	0	1
	PC14. repair, replace and modify street light equipment including heads, poles, controllers, lights, circuitry, switches, fuses, and cabinet parts		2	1	1
	PC15. assist in general electrical repair work		2	1	1
	PC16. help repair other electronic or electrical devices or equipment		2	1	1
			100	26	74
3. PSS/N2001 Use basic health and safety practices for power related work	PC1. use protective clothing/equipment for specific tasks and work conditions.	100	3	0	3
	PC2. state the name and location of people responsible for health and safety in the workplace		2	0	2
	PC3. state the names and location of documents that refer to health and safety in the workplace		2	0	2
	PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace		3	1	2
	PC5. follow electrical safe working procedures such as Tag out/Lock out and display PTW (Permit To Work),		3	1	2
	PC6. follow warning signs (danger, out of service, etc.) while working with electrical systems		3	1	2
	PC7. use standard safe working practices when working at heights, confined areas and trench		3	1	2
	PC8. test any electrical equipment and system using insulated testing		3	1	2

Assessment Criteria

	devices before touching them				
	PC9. ensure positive isolation of electrical equipment & system as per given standards		3	1	2
	PC10. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed		3	1	2
	PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others		3	1	2
	PC12. state methods of accident prevention in the work environment of the job role		2	0	2
	PC13. state location of general health and safety equipment in the workplace		2	0	2
	PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder		2	0	2
	PC15. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa		2	1	1
	PC16. inspect Grid station and its equipment routinely for any signs of oil and water leakage		2	0	2
	PC17. store flammable materials and machine lubricating oil safely and correctly		2	0	2
	PC18. check that the emission and pollution control devices are working properly in line with environmental policy standards		3	1	2
	PC19. apply good housekeeping practices at all times		3	1	2

Assessment Criteria

	PC20. identify common hazard signs displayed in various areas		2	0	2
	PC21. retrieve and/or point out documents that refer to health and safety in the workplace		2	0	2
	PC22. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly		3	0	3
	PC23. use the various appropriate fire extinguishers on different types of fires correctly		2	1	1
	PC24. distinguish types of fire		3	1	2
	PC25. demonstrate rescue techniques applied during fire hazard		3	1	2
	PC26. demonstrate good housekeeping in order to prevent fire hazards		3	1	2
	PC27. demonstrate the correct use of a fire extinguisher		3	1	2
	PC28. demonstrate how to free a person from electrocution		3	1	2
	PC29. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		3	0	3
	PC30. demonstrate basic techniques of bandaging		3	1	2
	PC31. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC32. perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2

Assessment Criteria

	PC33. 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
	PC34. demonstrate the artificial respiration and the CPR Process		3	1	2
	PC35. 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
	PC36. complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC37. demonstrate correct method to move injured people and others during an emergency		3	1	2
			100	24	76
4. PSS/N1336 Work effectively with others	PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	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		10	3	7
	PC6. display appropriate communication etiquette while working		10	3	7

Assessment Criteria

	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
			100	30	70