

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR POWER SECTOR

What are Occupational Standards(OS)?

Ø OS describe what individuals need to do, know and understand in order to carry out a particular job role or function

Ø OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Contact Us:

Power Sector Skill Council
2nd Floor, CBIP Building,
Malcha Marg,
Chanakyapuri, New
Delhi - 110021

E-mail: pssc@cbip.in



Contents

1. Introduction and Contacts.....	1
2. Qualifications Pack.....	2
3. Glossary of Key Terms	3
4. OS Units.....	5
5. Annexure: Nomenclature for OP & OS.....	22
6. Assessment Criteria.....	24

Introduction

Qualifications Pack: Surveyor -Transmission Line

SECTOR: Power

SUB-SECTOR: Transmission

OCCUPATION: Surveyor

REFERENCE ID: PSS/Q2002

ALIGNED TO: NCO-2004/NIL

Surveyor -Transmission Line is responsible for assisting Engineer in transmission line route survey of proposed path.

Brief Job Description: Carrying out route survey of power transmission line and preparing line drawing of proposed line path with survey data.

Personal Attributes: Work is performed in outdoors and requires excessive travel in irregular terrain. Work requires the ability to read and write geographical data/drawing and using GPS map. He should be well aware of all the type of tools and tackles used in route survey of transmission line.



Qualifications Pack For Surveyor Transmission Line



Job Details

Qualifications Pack Code	PSS/Q2002		
Job Role	Surveyor -Transmission Line		
Credits (NSQF)	TBD	Version number	1.0
Sector	Power	Drafted on	18/01/2016
Sub-sector	Transmission	Last reviewed on	19/07/2016
Occupation	Surveyor	Next review date	19/07/2018
NSQC Clearance Date	Not Applicable		

Job Role	Surveyor -Transmission Line
Role Description	Carrying out route survey of power transmission line and preparing line drawing of proposed line path with survey data.
NSQF level	3
Minimum Educational Qualifications	ITI Diploma(civil)
Maximum Educational Qualifications	Not Applicable
Training (Suggested but not mandatory)	Not Applicable
Minimum Job Entry Age	18 Years
Experience	Not Applicable
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> PSS/N2005 Carry out route Survey of power transmission line 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.	



Acronyms

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.
Keywords /Terms	Description
PPE	Personal Protective Equipment
GIS	Geographical information System
DGPS	Differential Geographical Positioning System
KW	Kilowatt
V	Volt
KWH	Kilo Watt Hour
PTW	Permit to work
CPR	Cardiopulmonary Resuscitation
GIS	Geographical information System
GPS	Geographical Positioning System
OPGW	Optical Ground Wire
PT	Potential Transformer
RMU	Ring Main Unit
SCADA	Supervisory Control and Data Acquisition
SEB	State Electricity Board
SERC	State Electricity Regulatory Commission
SMS	Short Message Service
T&D	Transmission and Distribution
T/F	Transformer
VT	Voltage Transformer
XLPE	Cross Linked Poly Ethylene Cable



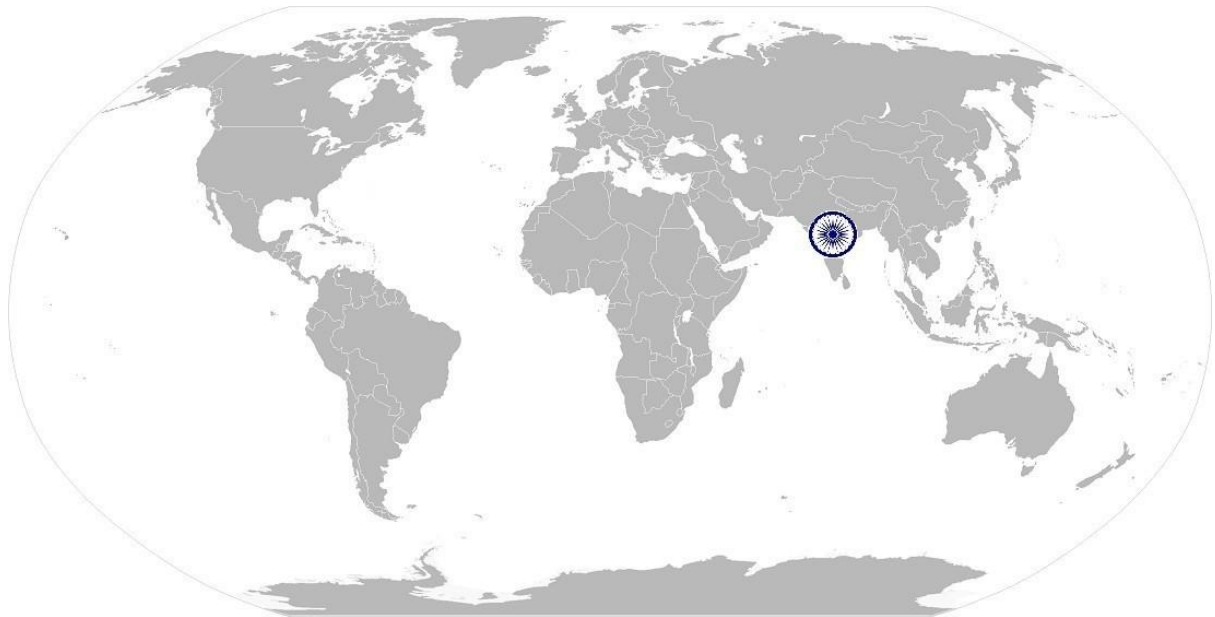
NOS
National Occupational Standards



PSS/N2005

Carry out route Survey of power transmission line

National Occupational Standard



Overview

This unit is about the route survey of power transmission line



PSS/N2005

Carry out route Survey of power transmission line

National Occupational Standard

Unit Code	PSS/N2005
Unit Title (Task)	Carry out route Survey of power transmission line
Description	Transmission line surveyor will carry out route survey of power transmission line and prepare line drawing of proposed line path with survey data.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> transmission line route survey
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Transmission line route survey	<p>The user/individual on the job needs to:</p> <p>PC1. demonstrate understanding of transmission line and grid substation</p> <p>PC2. ensure application of Right of Way (ROW) concepts</p> <p>PC3. perform route profiling</p> <p>PC4. demonstrate understanding of weather condition and climate of proposed area of transmission line</p> <p>PC5. be able to interpret and understand the geological/topographical sheet</p> <p>PC6. read geographical drawing</p> <p>PC7. ensure consideration of soil knowledge while decision making</p> <p>PC8. carry out route survey of power transmission line</p> <p>PC9. prepare line drawing of proposed line path with survey data</p> <p>PC10. carry out soil testing and measuring soil resistivity, identifying types of soil - hard soil, sand, stones etc.</p> <p>PC11. carry out bore log test, Standard Penetration Test (SPT) etc.</p> <p>PC12. study hazard profiles</p> <p>PC13. apply operational familiarity with tools of survey- Total station, Global Positioning System (GPS), Differential Geographical Positioning System (DGPS) etc.</p> <p>PC14. read and mark longitude and latitude of line on the area map</p> <p>PC15. create and manage data files on a daily basis to ensure data integrity and data security</p> <p>PC16. interpret map information to determine the best approach to efficiently survey project area</p> <p>PC17. identify specific landmark while undertaking route survey</p> <p>PC18. report to survey manager for any issues</p> <p>PC19. apply knowledge of GIS/GPS based softwares to map the line coordinates</p> <p>PC20. understand geological topographical sheet</p> <p>PC21. assess route survey, detailed and check survey</p> <p>PC22. prepare the profile optimization of towers</p>



PSS/N2005

Carry out route Survey of power transmission line

	<p>PC23. assess right ways and consider obstacles</p> <p>PC24. work with surveying instruments like theodolite, tension balancing, soil testing and measuring soil resistivity, types of soil, tests</p> <p>PC25. carry out study of hazard profiles of areas wherein transmission lines and towers are being erected</p> <p>PC26. be aware of different types of clearances required namely, forest clearance, railway clearance, clearance from highway authority, clearance for power grid line crossing</p> <p>PC27. ensure correct use of equipment and instruments - auto level equipment, Total station (TS) and GPS</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies and procedures followed in the organization 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 a clean and safe environment</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>



PSS/N2005

Carry out route Survey of power transmission line

<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. GPS, DGPS and GIS technology & terminology</p> <p>KB2. GIS software and survey equipment</p> <p>KB3. basic computer skill</p> <p>KB4. common electricity terminology and correct interpretation of the same terminology: e.g. current, voltage, resistance, kilowatt (kw), kilowatt hour(kwh)</p> <p>KB5. importance of reporting problems of survey in a timely manner</p> <p>KB6. Importance of appropriate judgment and initiative pertaining to work methods and tools</p> <p>KB7. technical manuals, blueprints, schematics, diagrams, plans, specifications estimate time, material and equipment needed to complete assignments</p> <p>KB8. quality parameters, quality assessment based on physical parameters</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<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 engineer</p> <p>SA2. note down observations (if any) related to the process</p> <p>SA3. Use basic computer skill</p> <p>SA4. read GPS devices</p> <p>SA5. operate GIS software for mapping of coordinates</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. read and interpret the process required for various types of operations</p> <p>SA7. read, interpret and process flowchart for all operations read manuals and operations documents to understand the equipment used into operation</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. discuss task lists, schedules and activities with the engineer</p> <p>SA9. effectively communicate with the team members</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. follow organization rule-based decision making process</p> <p>SB2. take decision with systematic course of actions and/or response</p> <p>Plan and Organize</p>



PSS/N2005

Carry out route Survey of power transmission line

	The user/individual on the job needs to know and understand: SB3. planning and organization of tasks to meet deadlines
	Customer Centricity
	Not Applicable
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. seek and Comprehend operation related inputs for clarification SB5. 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: SB6. apply domain information to set and define operation parameters that ensure economy and quality of the product
	Critical Thinking
The user/individual on the job needs to know and understand how to: SB7. critically evaluate operation parameters in relation to product features intended	

NOS Version Control

NOS Code	PSS/N2005		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	18/01/2016
Industry Sub-sector	Transmission	Last reviewed on	19/07/2016
Occupation	Surveyor	Next review date	19/07/2018

[Back to Top](#)



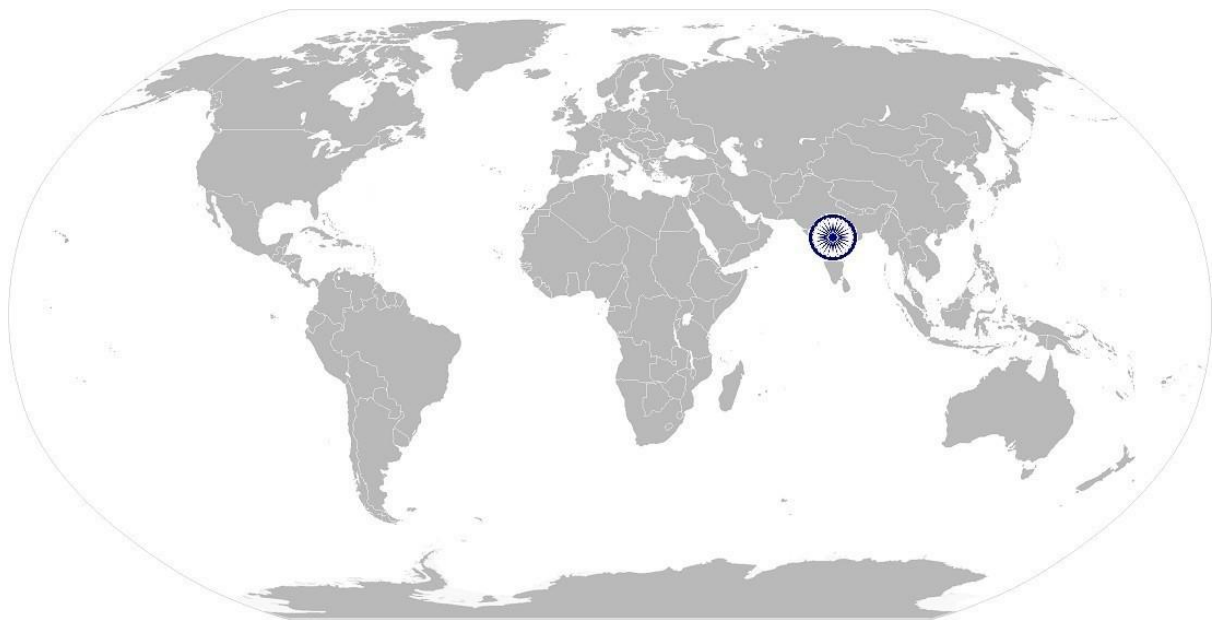
NOS
National Occupational Standards



PSS/N2001

Use basic health and safety practices for power related work

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.



NOS

National Occupational Standards



N.S.D.C

National Skill Development Corporation

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 leakage</p> <p>PC17. store flammable materials and machine lubricating oil safely and correctly</p>



NOS

National Occupational Standards



PSS/N2001 Use basic health and safety practices for power related work

	<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>

PSS/N2001 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	<p style="background-color: #e6f2ff;">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 officer incharge</p> <p>SA2. note down observations (if any) related to the operation/maintenance</p> <p style="background-color: #e6f2ff;">Reading Skills</p> <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> <p>SA4. read and interpret the flowchart of all parts of an assembly</p>



PSS/N2001 Use basic health and safety practices for power related work

	SA5. read manuals and documents to understand the product-details & how they can be used
	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 colleague SA7. effectively communicate with the team members SA8. attentively listen and comprehend the information given by the colleague /contractor SA9. communicate clearly with the colleague 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 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



NOS

National Occupational Standards

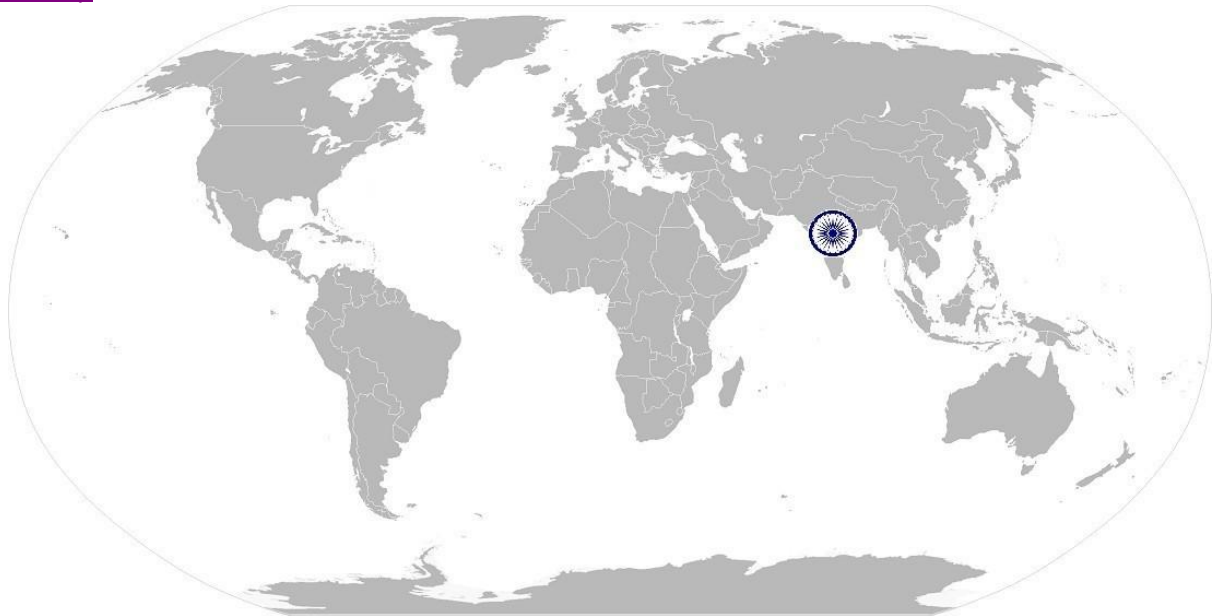


PSS/N2001 Use basic health and safety practices for power related work

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

[Back to Top](#)





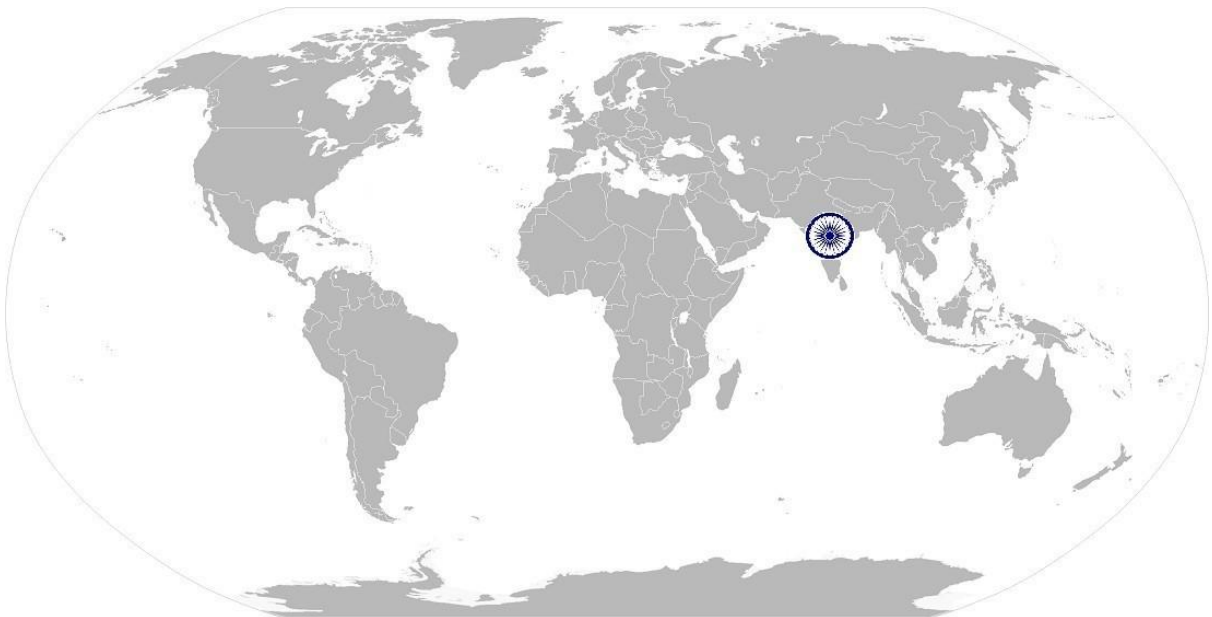
NOS
National Occupational Standards



PSS/N1336

Work effectively with others

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 others

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 performing tasks in a positive manner, where required and possible</p> <p>PC5. perform with 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>



<p>B. Technical Knowledge</p>	<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>
<p>Skills (S) (Optional)</p>	
<p>A. Core Skills/ Generic Skills</p>	<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 officer incharge</p> <p>SA2. note down observations (if any) related to the operation/maintenance</p> <p>Reading Skills</p> <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> <p>Oral Communication (Listening and Speaking skills)</p> <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 effectively communicate with the team members</p> <p>SA7. attentively listen and comprehend the information given by the colleague /contractor</p> <p>SA8. communicate clearly with the colleague on the issues faced during query/fault</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p>



PSS/N1336

Work effectively with others

	SB11. follow colleague/contractor rule-based decision making process 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

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

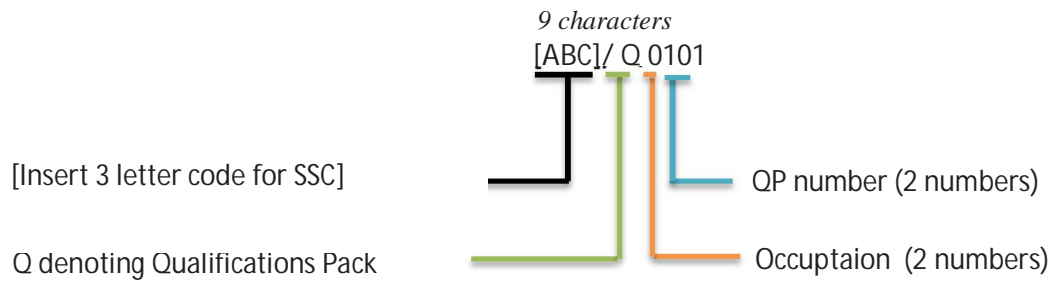
[Back to Top](#)



Annexure

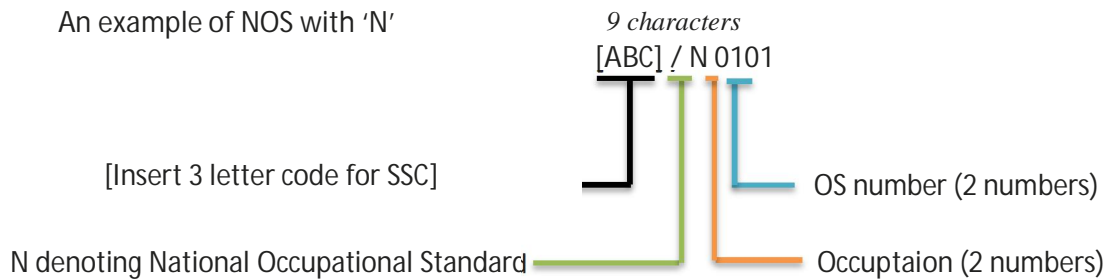
Nomenclature for QP and NOS

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



CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Surveyor - Transmission Line

Qualification Pack PSS/O2002

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/N2005 Carry out route Survey of power transmission line	PC1. apply understanding of transmission line and grid substation	100	4	1	3
	PC2. apply knowledge of Right of Way (ROW)		4	1	3
	PC3. apply knowledge of route profiling		4	1	3
	PC4. understand weather condition and climate of proposed area of transmission line		3	1	2
	PC5. understand of geological/topographical sheet		3	1	2
	PC6. apply skill in reading line/geographical drawing		4	1	3
	PC7. apply knowledge of soil and geographical		4	1	3
	PC8. carry out route survey of power transmission line		6	2	4
	PC9. prepare line drawing of proposed line path with survey data.		6	2	4



	PC10. carry out soil testing and measuring soil resistivity, identifying types of soil - hard soil, sand, stones etc.	4	1	3
	PC11. carry out bore log test, Standard Penetration Test (SPT) etc.	4	2	2
	PC12. study hazard profiles	3	1	2
	PC13. apply operational familiarity with tools of survey- Total station, Global Positioning System (GPS), Differential Geographical Positioning System (DGPS) etc.	3	1	2
	PC14. read and mark longitude and latitude of line on the area map.	3	1	2
	PC15. manage data files on a daily basis to ensure data integrity and data security.	3	1	2
	PC16. interpret map information to determine the best approach to efficiently survey project area.	3	1	2
	PC17. identify specific landmark while undertaking route survey.	4	1	3
	PC18. report to survey manager for any issues	3	1	2
	PC19. apply knowledge of GIS/GPS based softwares to map the line coordinates	3	1	2
	PC20. understand geological topographical sheet,	4	1	3
	PC21. apply knowledge of route survey, detailed and check survey,	4	1	3
	PC22. undertake preparation of profile optimization of towers, assessment of ways and looking for obstacles, understanding about right of way, knowledge and working of surveying instruments such as theodolite, tension balancing, soil testing and measuring soil resistivity, types of soil, tests, study of hazard profiles of areas wherein transmission lines and towers are being erected	3	1	2
	PC23. apply knowledge of different types of clearances required namely, forest clearance, railway clearance, clearance from highway authority, clearance for power grid line crossing	5	1	4



	PC24. equipment and instruments - auto level equipment, Total station (TS) and GPS		4	1	3
	PC25. ensure PPE for required electrical safety measures		3	1	2
	PC26. follow proper safety procedures in a variety of hazardous environments including high voltage areas and hilly terrain		3	1	2
	PC27. ensure road safety while working on road		3	1	2
	Total		100	30	70
2. 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
	PC1. state the name and location of people responsible for health and safety in the workplace		2	0	2
	PC2. state the names and location of documents that refer to health and safety in the workplace		2	0	2
	PC3. identify job-site hazardous work and state possible causes of risk or accident in the workplace		3	1	2
	PC4. follow electrical safe working procedures such as Tag out/Lock out and display PTW (Permit To Work),		3	1	2
	PC5. follow warning signs (danger, out of service, etc.) while working with electrical systems		3	1	2
	PC6. use standard safe working practices when working at heights, confined areas and trenches		3	1	2
	PC7. test any electrical equipment and system using insulated testing devices before touching them		3	1	2
	PC8. ensure positive isolation of electrical equipment & system as per given standards		3	1	2
	PC9. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/indicator installed		3	1	2
	PC10. carry out safe working practices while dealing with hazards to ensure the safety of self and others		3	1	2
	PC11. state methods of accident prevention in the work environment of the job role		2	0	2



PC12.	state location of general health and safety equipment in the workplace	2	0	2
PC13.	inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder	2	0	2
PC14.	lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa	2	1	1
PC15.	inspect Grid station and its equipment routinely for any signs of oil and water leakage	2	0	2
PC16.	store flammable materials and machine lubricating oil safely and correctly	2	0	2
PC17.	check that the emission and pollution control devices are working properly in line with environmental policy standards	3	1	2
PC18.	apply good housekeeping practices at all times	3	1	2
PC19.	identify common hazard signs displayed in various areas	2	0	2
PC20.	retrieve and/or point out documents that refer to health and safety in the workplace	2	0	2
PC21.	inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly	3	0	3
PC22.	use the various appropriate fire extinguishers on different types of fires correctly	2	1	1
PC23.	distinguish types of fire	3	1	2
PC24.	demonstrate rescue techniques applied during fire hazard	3	1	2
PC25.	demonstrate good housekeeping in order to prevent fire hazards	3	1	2
PC26.	demonstrate the correct use of a fire extinguisher	3	1	2
PC27.	demonstrate how to free a person from electrocution	3	1	2
PC28.	administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	3	0	3
PC29.	demonstrate basic techniques of bandaging	3	1	2



	PC30.	respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC31.	perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC32.	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
	PC33.	demonstrate the artificial respiration and the CPR Process		3	1	2
	PC34.	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
	PC35.	complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC36.	demonstrate correct method to move injured people and others during an emergency		3	1	2
				100	24	76
3.	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
		PC1. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
		PC2. give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
		PC3. display helpful behavior by performing tasks in a positive manner, where required and possible		10	3	7
		PC4. perform with others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
		PC5. display appropriate communication etiquette while working		10	3	7



Qualifications Pack For Surveyor Transmission Line



	PC6. display active listening skills while interacting with others at work	10	3	7
	PC7. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism	10	3	7
	PC8. demonstrate responsible and disciplined behaviors at the workplace	10	3	7
	PC9. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	10	3	7
		100	30	70