

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

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Introduction

Qualifications Pack: Assistant- Tower Erection Power Transmission

SECTOR: Power

SUB-SECTOR: Transmission

OCCUPATION: Tower Erection

REFERENCE ID: PSS/Q2003

ALIGNED TO: NCO-2004/NIL

Assistant- Tower Erection Power Transmission requires possessing knowledge of erection & commissioning of power transmission tower

Brief Job Description: Under supervision, carrying out and assist in erection & commissioning of power transmission towers of all the types

Personal Attributes: Work is performed mostly outdoors in all weather conditions. Work requires the ability to perform manual activities. Work also involves bending, climbing, pulling, lifting and carrying, kneeling, walking, and standing for significant periods of time. Candidate will be exposed to different geographical area and irregular terrain.



Qualifications Pack For Assistant- Tower Erection
Power Transmission



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|--------------------|--------------------------|---|------------------|------------|
| Job Details | Qualifications Pack Code | PSS/Q2003 | | |
| | Job Role | Assistant Tower Erection Power Transmission | | |
| | Credits (NSQF) | TBD | Version number | 1.0 |
| | Sector | Power | Drafted on | 25/01/2016 |
| | Sub-sector | Transmission | Last reviewed on | 19/07/2016 |
| | Occupation | Tower erection | Next review date | 19/07/2018 |
| | NSQC Clearance Date | Not Applicable | | |

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| Job Role | ASSISTANT- TOWER ERECTION POWER TRANSMISSION |
| Role Description | Under supervision, carries out and assist in tower erection & commissioning of transmission tower. In addition the candidate will assist in material handling. |
| NSQF level | 3 |
| Minimum Educational Qualifications | 10 th Standard |
| 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) | <p>Compulsory:</p> <ol style="list-style-type: none"> PSS/N2006 Carry out erection of transmission tower PSS/N2001 Use basic health and safety practices as the workplace PSS/N1336 Work effectively with others <p>Optional: Not Applicable</p> |
| 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 |



Qualifications Pack For Transmission tower erection
assistant

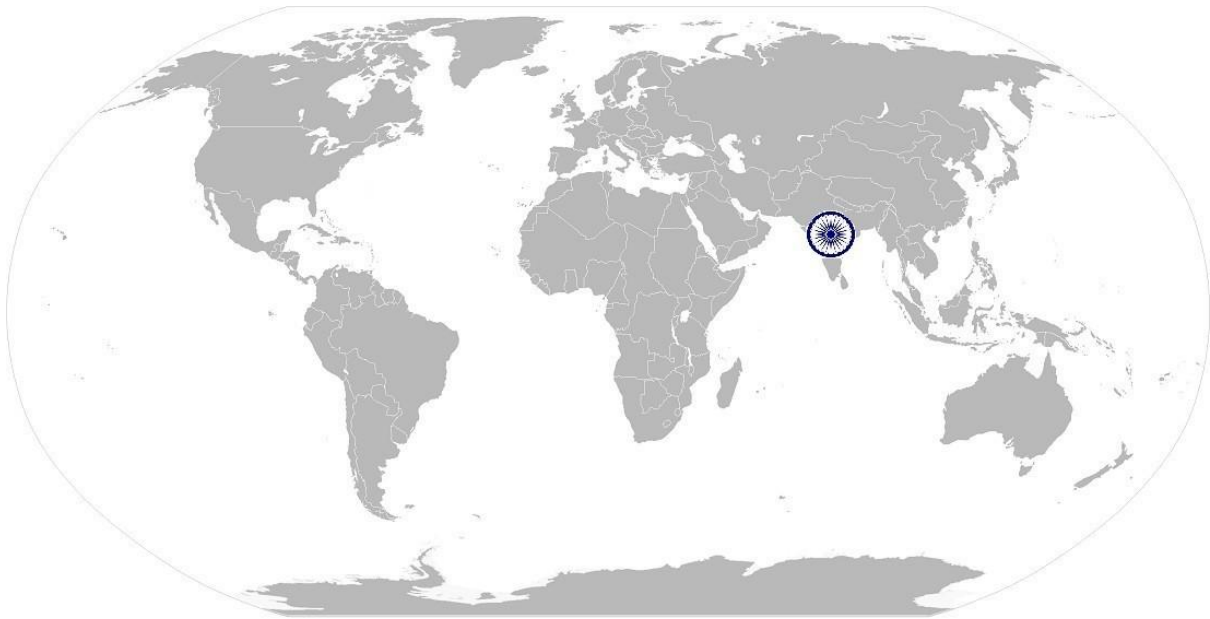


Acronyms

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| | 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 |
| KW | Kilowatt |
| V | Volt |
| KWH | Kilo Watt Hour |
| PTW | Permit to work |
| CPR | Cardio Pulmonary Resuscitation |
| GIS | Geographical Information System |



National Occupational Standard



Overview

This unit is about the tower erection and commissioning activities performed by an Assistant tower erection power transmission



PSS/N2006

Carry out erection of transmission tower

National Occupational Standard

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| Unit Code | PSS/N2006 |
| Unit Title (Task) | Carry out erection of transmission tower |
| Description | Assistant will carry out tower erection and commissioning of transmission tower as per design drawing and instructions. |
| Scope | This unit/task covers the following: <ul style="list-style-type: none"> transmission tower erection |
| Performance Criteria(PC) w.r.t. the Scope | |
| Element | Performance Criteria |
| Transmission tower erection | <p>The user/individual on the job needs to:</p> <p>PC1. have knowledge of various types of towers</p> <p>PC2. have awareness of various types of transmission tower erection</p> <p>PC3. be able to read the instructions for erection as per drawing of transmission tower</p> <p>PC4. apply knowledge of type/component/member of tower</p> <p>PC5. arrange members of tower in order of erection requirement (sorting different tower parts)</p> <p>PC6. be able to climb on tower and connecting members of tower in order</p> <p>PC7. tighten nuts and know punching of threads and tack welding of nuts of transmission towers</p> <p>PC8. carry all the tools & equipment needed for erection or installation such as hook chook</p> <p>PC9. paint joints of transmission tower</p> <p>PC10. check the verticality of erected transmission towers</p> <p>PC11. assist with logistic and material handling</p> <p>PC12. demonstrate operational familiarity with tools and tackles</p> <p>PC13. be able to understand drawings, dimensions of members according to type of towers, tension balancing, torqueing etc.</p> <p>PC14. show operational familiarity with tools e.g. spanners, pulley arrangement, rope, 2-way, 3-way pulleys, nuts, bolts, tack welding, step bolts etc.</p> <p>PC15. apply knowledge of rust preventing agents</p> <p>PC16. apply awareness of for different geography of transmission line area</p> |
| Knowledge and Understanding (K) | |



PSS/N2006

Carry out erection of transmission tower

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| <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> |
| <p>B. Technical Knowledge</p> | <p>The individual on the job needs to know and understand:</p> <p>KB1. types of transmission tower based on height, transmission voltage and technology</p> <p>KB2. all tower material for erection and commissioning</p> <p>KB3. tower erection process</p> <p>KB4. tools and tackles used in tower erection</p> <p>KB5. technical manuals, blueprints, schematics, diagrams, plans, specifications estimate time, material and equipment needed to complete assignments</p> <p>KB6. tightening of nuts and punching of threads and tack welding of nuts of transmission towers</p> <p>KB7. process of painting of joints of transmission tower</p> <p>KB8. process of checking the verticality of erected transmission towers</p> <p>KB9. process of assisting in handling all machineries, equipment & vehicles for tower erection</p> <p>KB10. quality parameters, quality assessment based on physical parameters</p> <p>KB11. importance of reporting problems in a timely manner</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 supervisor or engineer</p> <p>SA2. note down observations (if any) related to the process</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 various types of operations</p> <p>SA4. read, interpret and process flowchart for all operations</p> <p>read manuals and operations documents to understand the equipment used</p> |



PSS/N2006

Carry out erection of transmission tower

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| | into operation |
| | Oral Communication (Listening and Speaking skills) |
| | The user/individual on the job needs to know and understand how to: SA5. discuss task lists, schedules and activities with the supervisor SA6. effectively communicate with the team members |
| 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 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 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 info 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 service |
| | Critical Thinking |
| | The user/individual on the job needs to know and understand how to: SB7. critically evaluate operation parameters in relation to operations intended |

NOS Version Control

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|---------------------|----------------|------------------|------------|
| NOS Code | PSS/N2006 | | |
| Credits (NSQF) | TBD | Version number | 1.0 |
| Industry | Power | Drafted on | 25/01/2016 |
| Industry Sub-sector | Transmission | Last reviewed on | 19/07/2016 |
| Occupation | Tower erection | Next review date | 19/07/2018 |



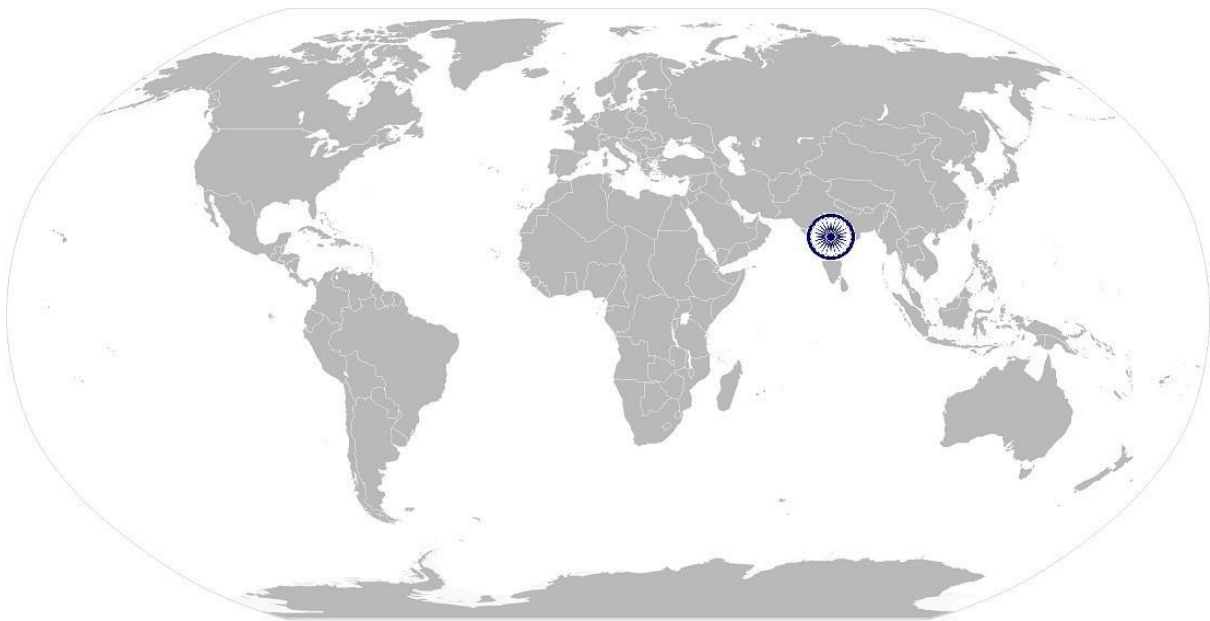
NOS
National Occupational Standards



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.



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

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|---------------------------------------|---|---|
| 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> <p>PC18. check that the emission and pollution control devices are working properly in</p> | |



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

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| | <p>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> |
| <p>Fire safety</p> | <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> |
| <p>Emergencies, rescue and first-aid procedures</p> | <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> |
| <p>Knowledge and Understanding (K)</p> | |
| <p>A. Organizational Context</p> | <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

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| 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>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 for maintenance</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</p> |



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

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| | 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/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. |
| 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 | |

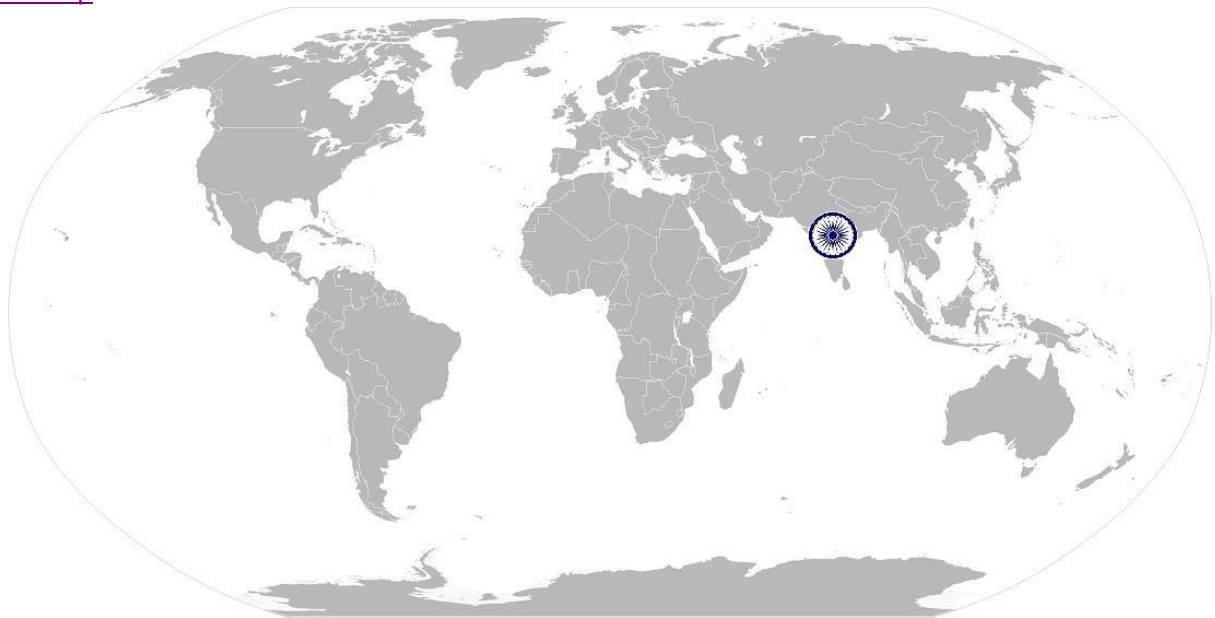


PSS/N2001 Use basic health and safety practices for power related work

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| 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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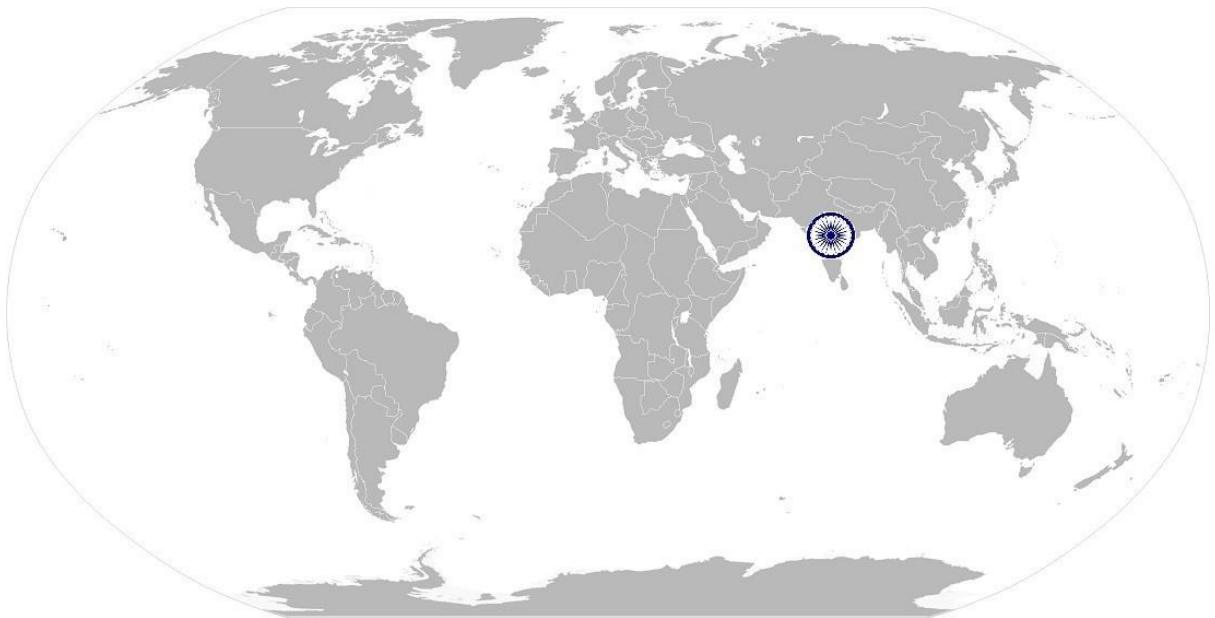
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PSS/N1336

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



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| 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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| <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 coordinate 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/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> |
| <p>B. Professional Skills</p> | <p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> |



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| | 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

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|---------------------|---|------------------|------------|
| 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 |

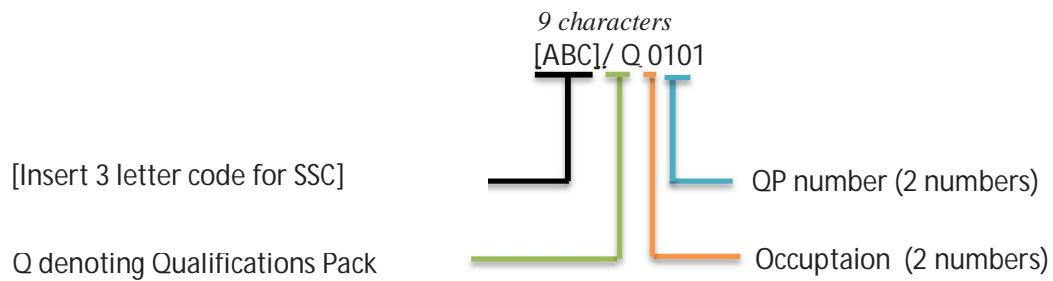
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Annexure

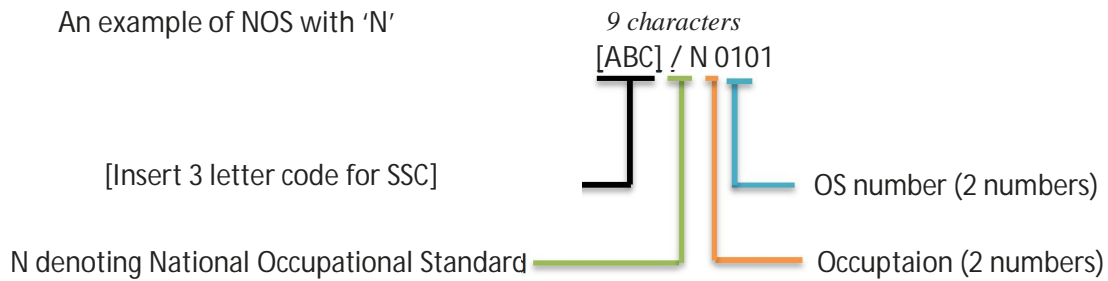
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'





Qualifications Pack For Assistant- Tower Erection
Power Transmission



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 Assistant- Tower Erection Power Transmission

Qualification Pack PSS/Q2003

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/N2006 Carry out erection of transmission tower | PC1. understand various types of towers | | 6 | 2 | 4 |
| | PC2. apply knowledge of various types of transmission tower erection (i) Build-up method or piecemeal method. (ii) Section method. (iii) Ground assembly method. (iv) Helicopter method. | | 6 | 2 | 4 |
| | PC3. read and instruct erection as per drawing of transmission tower erection | | 6 | 1 | 5 |
| | PC4. apply knowledge of type/component/member of tower | | 6 | 2 | 4 |
| | PC5. arrange members of tower in order of erection requirement(sorting different tower parts) | | 6 | 1 | 5 |
| | PC6. climb on tower and connecting members of tower in order | | 7 | 2 | 5 |
| | PC7. tighten nuts and punching of threads and tack Welding of nuts of | | 7 | 2 | 5 |



| | | | | | |
|--|--|-----|-----|----|----|
| | Transmission Towers | | | | |
| | PC8. carry all the tools & equipment needed for erection or installation such as hook chook | | 4 | 1 | 3 |
| | PC9. paint Joints of Transmission Tower | | 5 | 1 | 4 |
| | PC10. check the Verticality of Erected Transmission Towers | | 5 | 2 | 3 |
| | PC11. assist with logistic and material handling | | 6 | 2 | 4 |
| | PC12. show operational familiarity with tools and tackles | | 6 | 2 | 4 |
| | PC13. understand drawings, dimensions of members according to type of towers, tension balancing, torqueing etc. | | 6 | 2 | 4 |
| | PC14. show operational familiarity with tools - spanners, pulley arrangement, rope, 2-way, 3-way pulleys, nuts, bolts, tack welding, step bolts etc. | | 6 | 2 | 4 |
| | PC15. apply knowledge of rust preventing agents | | 6 | 2 | 4 |
| | PC16. apply awareness geography of transmission line area | | 6 | 2 | 4 |
| | PC17. apply knowledge of PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), safety rope ,ladder etc. | | 6 | 2 | 4 |
| | 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. | | 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 | 100 | 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 | 3 | 0 | 3 |



| | | | | | |
|--|--|-----|-----|----|----|
| | shock, poisoning etc. | | | | |
| | 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 |
| | PC2. accurately pass on information to authorized persons who require it | | 10 | 3 | 7 |



Qualifications Pack For Assistant- Tower Erection
Power Transmission



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| | and within agreed timescale and confirm its receipt | | | | |
| | PC3. give information to others clearly, at a pace and in a manner that helps them to understand | | 10 | 3 | 7 |
| | PC4. display helpful behaviour 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 |
| | 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 behaviours 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 |