

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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Qualifications Pack- Operator Coal Handling - Thermal Power Generation

SECTOR: POWER

SUB-SECTOR: Generation

OCCUPATION: Operator

REFERENCE ID: PSS/Q1004

ALIGNED TO: NCO-2004/NIL

Operator Coal Handling - Thermal Power Generation operates the Coal handling plant operation and monitoring of equipment in the coal handling plant and takes appropriate actions to ensure safe, efficient and reliable operation of the systems. Also, operator takes decisions related to the day to day operation of coal unloading, coal storage, coal transport through conveyor belts and related jobs of coal management including coal crushing.

Brief Job Description: The incumbent in the job will comply with and practice proper equipment clearance procedures, monitor unloading of unit coal trains, transportation of coal from railway siding to appropriate place, reclaiming and stockpiling of coal supplies as necessary. Coordinate with Railways personnel on release of unit coal trains. Ensure preventive maintenance of coal handling equipment to keep it operating efficiently and reliably. Maintain required coal handling documentation including records and log sheets.

Personal Attributes: The candidate should be able to read, write and communicate effectively and clearly with a number of stakeholders. The candidate should demonstrate patience and ability to work and inspect work in detail. The candidate shall be able to work in dusty environment and should not be allergic to coal fumes.



Qualifications Pack For Operator Coal Handling - Thermal Power Generation



Job Details

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| Qualifications Pack Code | PSS/Q1004 | | |
| Job Role | Operator Coal Handling - Thermal Power Generation | | |
| Credits (NSQF) | TBD | Version number | 1.0 |
| Sector | Power | Drafted on | 25/01/2016 |
| Sub-sector | Generation | Last reviewed on | 19/07/2016 |
| Occupation | Operator | Next review date | 19/07/2018 |
| NSQC Clearance Date | Not Applicable | | |

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| Job Role | Operator Coal Handling - Thermal Power Generation |
| Role Description | Individual carry out Coal handling plant operations and monitors equipment in the coal handling plant and takes appropriate actions to ensure safe, efficient and reliable operation of the systems. |
| NSQF level | 4 |
| Minimum Educational Qualifications | ITI (Electrical/Mechanical) |
| 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/N1004 perform operations of Coal Handling Plant PSS/N2001 Use basic health and safety practices at the workplace PSS/N1336 Work effectively with others <p>Optional: Not Applicable</p> |
| Performance Criteria | As described in the relevant OS units |



| Keywords /Terms | Description | |
|---------------------------------------|---|---|
| Definitions | 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. | |



Qualifications Pack For Operator Coal Handling - Thermal
Power Generation

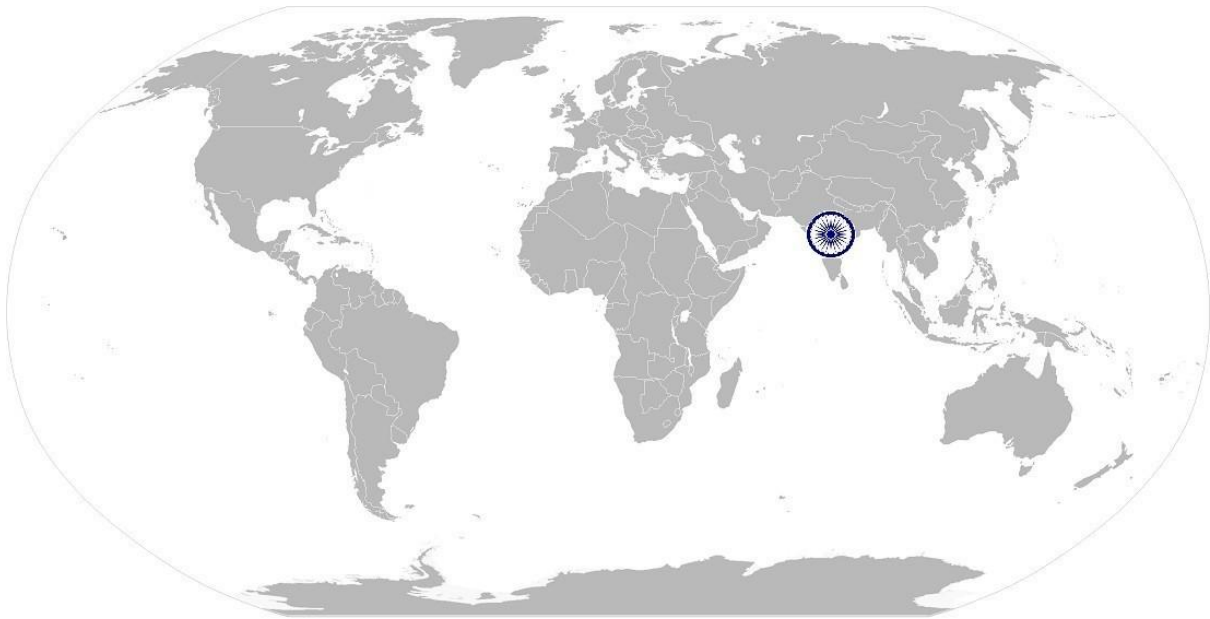


Acronyms

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| Core Skills/Generic Skills | Core Skills or Generic Skills as set are group of skills. It is important for 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 |
| CHP | Coal Handling Plant |
| ILMS | Inline Belt Magnetic Separator |
| KV | Kilovolt |
| KVA | Kilovolt Ampere |
| Kw | Kilowatt |
| Kwh | Kilowatt hour |
| OBMS | Over Band Magnetic Separator |
| PPE | Personal Protective Equipment |
| PTW | Permit to Work |



National Occupational Standard



Overview

This unit covers the competencies required for operational activities of Coal Handling Plant. It also covers the respective health and safety competencies required to perform such operations.



PSS/N1004

Perform operations of coal handling plant

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| National Occupational Standard | Unit Code | PSS/N1004 |
| | Unit Title (Task) | Operations of Coal Handling Plant |
| | Description | This unit covers the competencies required by operators for operational know-how of coal handling plant. This includes complying with and practicing proper equipment clearance procedures |
| | Scope | This unit/task covers the following: <ul style="list-style-type: none"> coal handling Plant functioning coal unloading coal crushing operations coal storage operations related activities working safely |
| | Performance Criteria(PC) w.r.t. the Scope | |
| Element | Performance Criteria | |
| Coal handling Plant functioning | <p>The user/individual on the job needs to:</p> <p>PC1. understand coal handling plant right from arrival of wagon, unloading of coal by wagon tippler or merry go round, transportation of coal to appropriate locations, coal crushing, coal management etc.</p> <p>PC2. understand various equipment and functioning of the entire coal handling plant including key equipments like Wagon tippler, conveyor belts, stacker reclaimer, coal crushing equipment, beetle charges, hoppers, Overhang Bed Magnetic Separators, inline magnetic separators etc.</p> <p>PC3. ensure proper operations of equipments such as conveyors, crushers, dozers and loaders</p> | |
| Coal unloading | <p>The user/individual on the job needs to:</p> <p>PC4. perform operations and functioning of coal unloading system viz merry go round and wagon tippler</p> <p>PC5. ensure proper and smooth unloading of coal in merry go round system</p> <p>PC6. ensure unloading of coal from wagons by placement of wagons on tipplers as well as reclaiming and stockpiling of coal supplies as necessary</p> <p>PC7. coordinate with railways personnel on release of rail wagons</p> <p>PC8. prevent spillover or wastage of coal at any place within the coal unloading area and transportation assemblies/equipment</p> <p>PC9. maintain accurate daily records of coal received and unloaded</p> <p>PC10. read and use belt weigher, operate coal sampler</p> <p>PC11. operate the safety equipment/instruments installed in the unloading plant</p> <p>PC12. ensure removal of unwanted particulates from coal</p> | |
| Coal crushing operations | <p>The user/individual on the job needs to:</p> <p>PC13. ensure smooth operations of coal crushing plant</p> <p>PC14. monitor size of crushed coal, quantum of coal being crushed</p> | |



PSS/N1004

Perform operations of coal handling plant

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| | <p>PC15. manage coal crushing operations, monitoring of sub equipment of coal crushing plant</p> <p>PC16. remove the chokage of coal from hopper using appropriate methods</p> |
| Coal storage | <p>The user/individual on the job needs to:</p> <p>PC17. ensure smooth functioning of conveyor belts by continuous monitoring and escalating any issue observed to maintenance team</p> <p>PC18. ensure compacting of coal by dozers and minimization of dust by sprinkling water on stored coal</p> <p>PC19. ensure proper steps being undertaken to prevent fire in the coal storage area</p> <p>PC20. ensure proper steps for extinguishing fire in the coal storage area</p> <p>PC21. constantly monitor bunkers and storage bins for sign of overheated coal so that it can be removed before spontaneous combustion occurs.</p> <p>PC22. monitor operation of stacker reclaimers and ensure coal is stacked in an optimum and safe way. Have the ability to line up, start and monitor operations of dust removal and suppression system</p> <p>PC23. ensure smooth and planned reclaiming of coal in case of coal requirement</p> |
| Operations related activities | <p>The user/ individual on the job should be able to:</p> <p>PC24. record details of inspection accurately and clearly in required ledgers, forms and formats as per required and approved procedures</p> <p>PC25. check for cuts, sways in conveyor belts and monitor jointing and clamping of belts in case of breakdown</p> <p>PC26. ensure oiling and greasing of pulleys and properly monitor functioning of rollers, crushers, gearboxes and chutes</p> <p>PC27. line up, start and monitor operation of vertical, horizontal and positive displacement pumps</p> <p>PC28. line up, start and monitor operation of dust removal and suppression system</p> <p>PC29. explain the functioning and clutches monitoring parameters of gear boxes, fluid couplings, clutches</p> <p>PC30. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved</p> <p>PC31. leave the work area in a safe and tidy condition on completion of the inspection and testing activities</p> <p>PC32. refer unresolved job related problems to appropriate personnel for support</p> <p>PC33. monitor the problem and keep the relevant people informed about progress or any delays in resolving the problem</p> |
| Working safely | <p>The user/individual on the job needs to:</p> <p>PC34. handle fire and operate fire extinguishers</p> <p>PC35. work effectively in dusty environment</p> <p>PC36. not be allergic to coal related fumes and dust</p> |
| Knowledge and Understanding (K) | |



PSS/N1004

Perform operations of coal handling plant

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| <p>A. Organizational Context –</p> | <p>The user/individual should have knowledge and understanding of</p> <ul style="list-style-type: none"> KA1. relevant legislation, standards, policies, and procedures followed in the organization relevant to own employment and performance conditions KA2. relevant health and safety requirements applicable in the work place KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities KA4. how to engage with specialists for support in order to resolve incidents and service requests KA5. importance of working in clean and safe environment practices and procedures KA6. reporting structure, inter-dependent functions, lines and procedures in the work area KA7. relevant people and their responsibilities within the work area KA8. escalation matrix and procedures for reporting work and employment related issues |
| <p>B. Technical Knowledge</p> | <p>The user/individual should have knowledge and understanding of</p> <ul style="list-style-type: none"> KB1. coal unloading systems viz wagon tippler and merry go round system, principle of unloading systems, use of unloading systems and related aspects KB2. coal crushing technology , type of coal crushers, single stage crushing, primary and secondary crushing, rotatory breakers, roll crushers KB3. fire management in coal yard, techniques of fire management in coal yard viz. dry fog water system, hose pipe water system KB4. various protection mechanism for coal transportation viz. Belt sway switch, pull chord switch, zero speed switch etc. KB5. key tools and tackles viz. belts, rollers, pulley, gear box, shoot repair, crusher, hammers, greasing requirement, vulcanization, coal stacking and reclamation, belt tripper etc. KB6. key components of conveyor belts: magnetic separators (OBMS & ILMS), belt sways, pull chord switches & zero speed switch KB7. working of crushing system in plant – single stage crushing or two stage crushing and type of crushers used in plant KB8. working of key equipment such as wagon tippers, beetle chargers, conveyor belts, apron feeders, ring granulator, vibrating screens, stacker reclaimers etc. KB9. tools used in operation of the coal processing equipment and machinery. knowledge of tools and equipment used in testing, repair and maintenance: KB10. pulverization system, rotary parts, valves, bearing and their alignment KB11. measurement of parameter reading and its applications KB12. regular and periodic inspection |



PSS/N1004

Perform operations of coal handling plant

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| | <p>KB13. circumstances which may require ad-hoc inspections</p> <p>KB14. importance of ensuring that tools and equipment are suitable, well maintained, calibrated and operating effectively</p> <p>KB15. working principles and operations of alignment rollers bulldozers, gravity rollers, coal reclaimers, monitoring of dust control etc.</p> <p>KB16. Coal to electricity cycle</p> <p>KB17. Heat value/calorific value of coal, coal sizing etc.</p> <p>KB18. basics of electricity</p> <p>KB19. principles and practices of electrical safety</p> <p>KB20. common electricity terminology and correct interpretation of terminology: e.g. Current, Voltage, Resistance, Inductance, Capacitance, Kilovolt ampere (kVA), Kilowatt (kw), active power, Kilowatt hour (kwh), Power factor</p> <p>KB21. able to extend arms overhead while performing duties or perform duties while standing, stooping, twisting, bending, kneeling or from a prone position for up to one hour may be required.</p> <p>KB22. methods and parameters to check quality of line components against required quality standards Methods: e.g. visual inspection, binoculars, measuring tape, use of instruments</p> <p>KB23. personal protective equipment (PPE) and clothing PPE: e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope that must be worn during inspection, repair and maintenance activity and from where can it be obtained</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. communicate effectively with other operators and plant personnel and write the information communicated</p> <p>SA2. understand and execute written instructions and relay instructions to follow-on shifts when multi-shift operations are used.</p> <p>SA3. write properly about the technical problems and other conditions of site and escalate the issues to the maintenance department</p> <p>SA4. note down testing repair observations, critical points</p> <p>SA5. prepare and fill up all technical forms and data as per guidelines and format</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. read and have understanding of written sentences and paragraphs</p> <p>SA7. able to read Metric System for all measurements</p> <p>SA8. interpret the process required for performing of work</p> <p>SA9. read, interpret and understand the rules and methods</p> |



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Perform operations of coal handling plant

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| | SA10. read equipment manuals and understand the equipment operation and process requirement |
| | Oral Communication (Listening and Speaking skills) |
| | The user/individual on the job needs to know and understand how to: SA11. perform effective oral communication with team and other staff SA12. able to communicate effectively with voice modulation, tone of voice and eye contact SA13. use good body language for good oral communication SA14. discuss task lists, schedules and activities with colleagues |
| B. Professional Skills | Decision Making |
| | The user/individual on the job needs to know how to: SB1. judgment and decision making must be appropriate SB2. identify complex problems and review related information to develop and evaluate SB3. follow organization rule based decision making process SB4. take decision with systematic course of actions and/or response |
| | Plan and Organize |
| | The user/individual on the job needs to know and understand: SB5. planning and organization of tasks to meet deadlines |
| | Customer Centricity |
| | The user/individual on the job needs to know and understand how to: SB6. build customer relationships and use customer centric approach. |
| | Problem Solving |
| | The user/individual on the job needs to know and understand: SB7. identify problems and review related information to develop and evaluate options and implement solutions SB8. prioritize and plan for solving problems SB9. perform to solve the problems SB10. analyze problems and changes in conditions, operations, and the environment to solve problems |
| | Analytical Thinking |
| | The user/individual on the job needs to know and understand how to: SB11. analyze the problem seen in the equipment SB12. collect the information and technical data and define process for doing testing and maintenance |
| | Critical Thinking |
| | The user/individual on the job needs to know and understand how to: SB13. critically evaluate operation parameters in relation to product features intended SB14. develop holistic and comprehensive profile of equipment based on segregated discrete process stages |



PSS/N1004

Perform operations of coal handling plant

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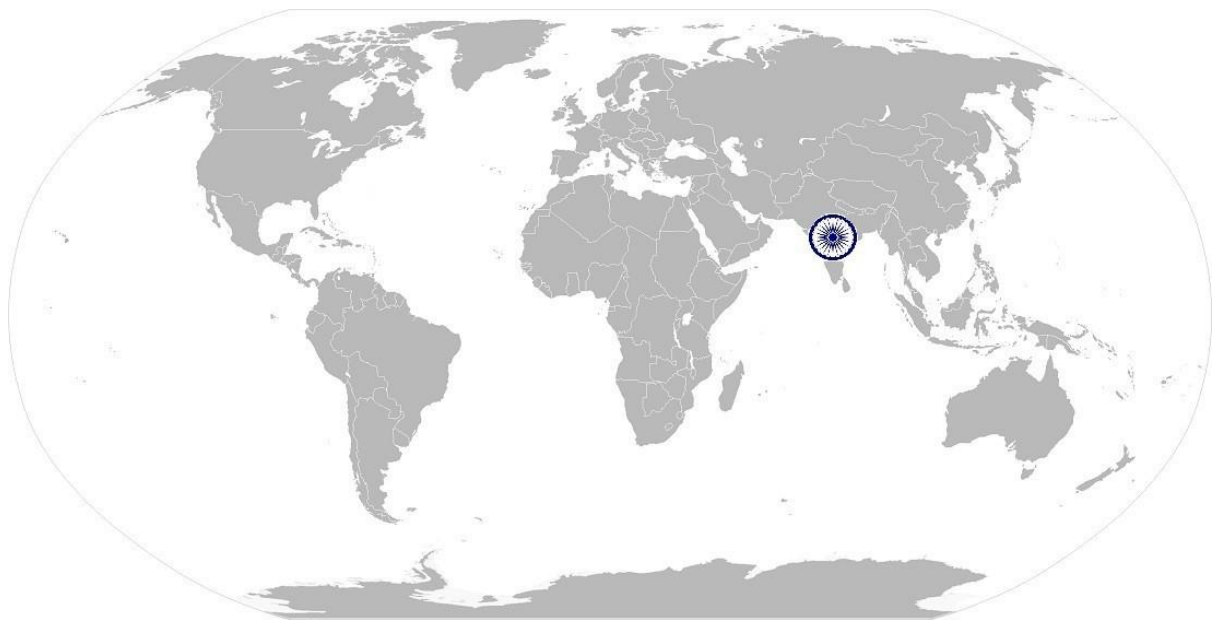
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| NOS Code | PSS/N1004 | | |
| Credits (NSQF) | TBD | Version number | 1.0 |
| Industry | Power | Drafted on | 25/01/2016 |
| Industry Sub-sector | Generation | Last reviewed on | 19/07/2016 |
| Occupation | Operator | Next review date | 19/07/2018 |

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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 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

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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 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

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| | <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> |



NOS

National Occupational Standards



N · S · D · C

National Skill Development Corporation

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

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| <p>B. Technical Knowledge</p> | <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> |
| <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 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> |



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

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| | 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. |



NOS

National Occupational Standards

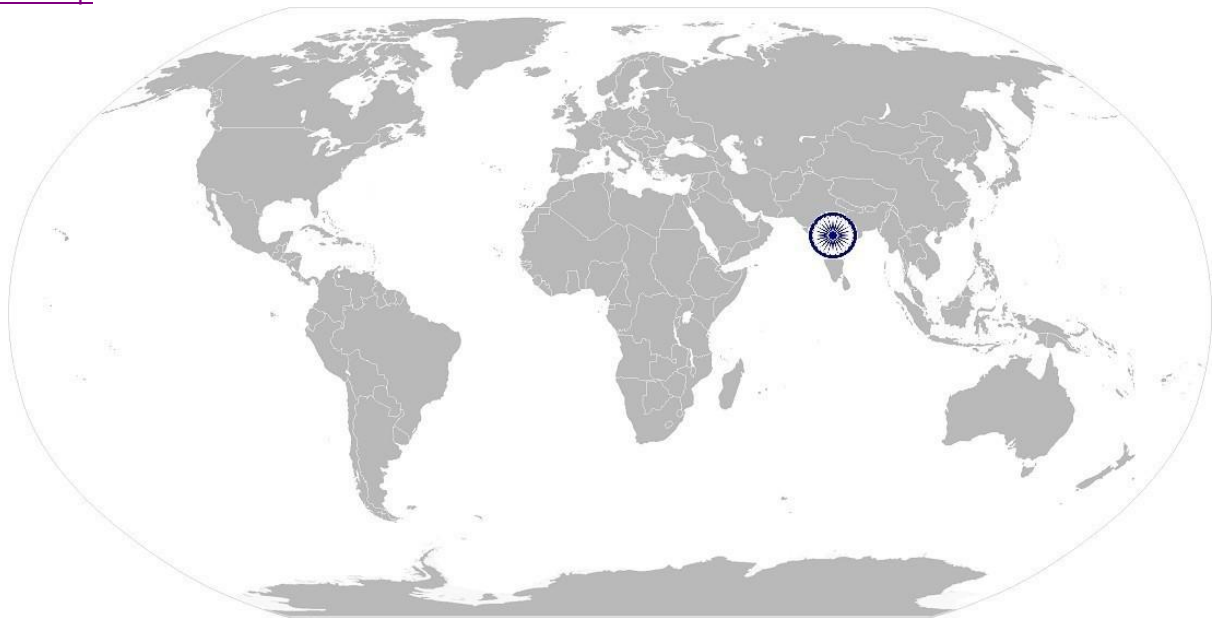


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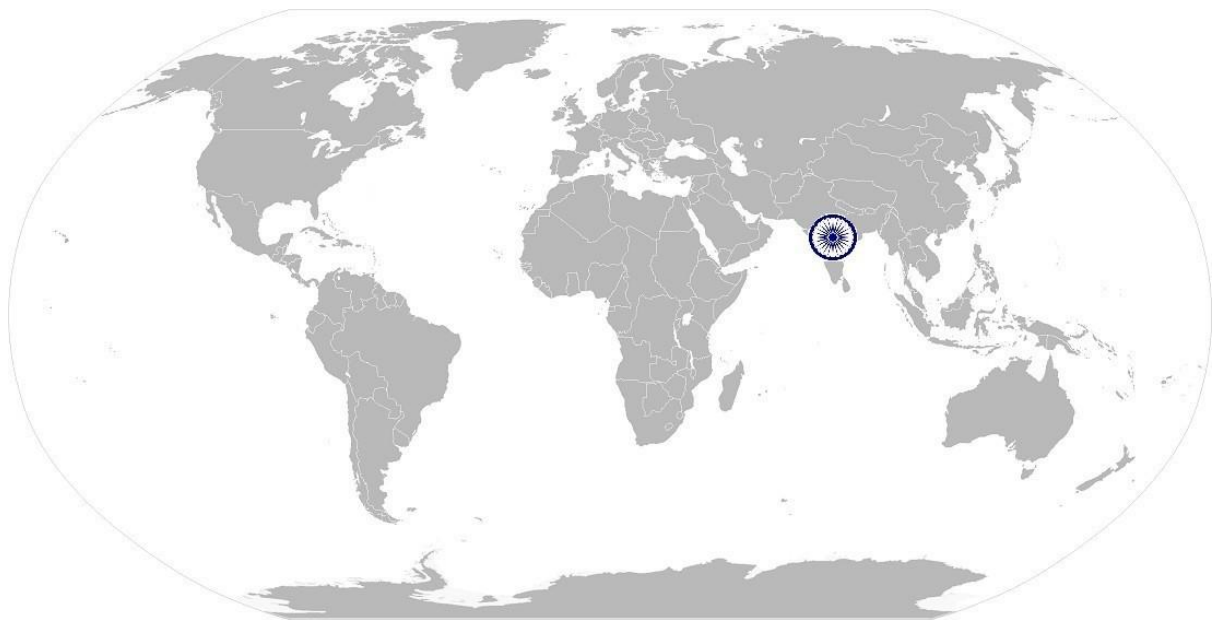
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| NOS Code | PSS/N2001 | | |
| Credits (NSQF) | TBD | Version number | 1.0 |
| Industry | Power | Drafted on | 04/06/2016 |
| Industry Sub-sector | Generation, Transmission & Distribution | Last reviewed on | 19/07/2016 |
| Occupation | Technician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

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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 relevant people 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 organization 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 others

| | |
|---|---|
| <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.</p> <p>SA7. effectively communicate with the team members.</p> <p>SA8. attentively listen and comprehend the information given by the colleague /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> <p>SB11. follow colleague/contractor rule-based decision making process.</p> |



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Work effectively with others

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

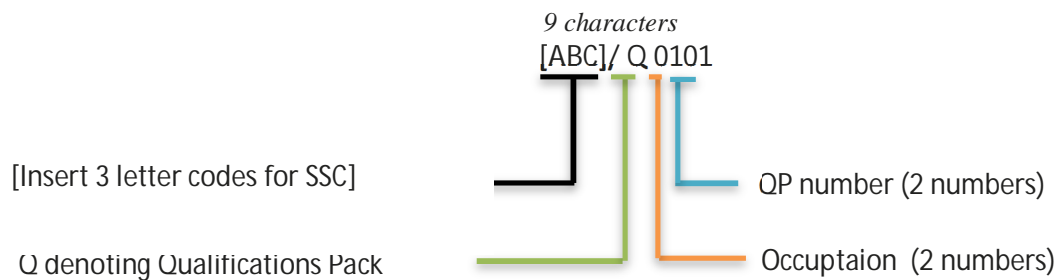
[Back to Top](#)



Annexure

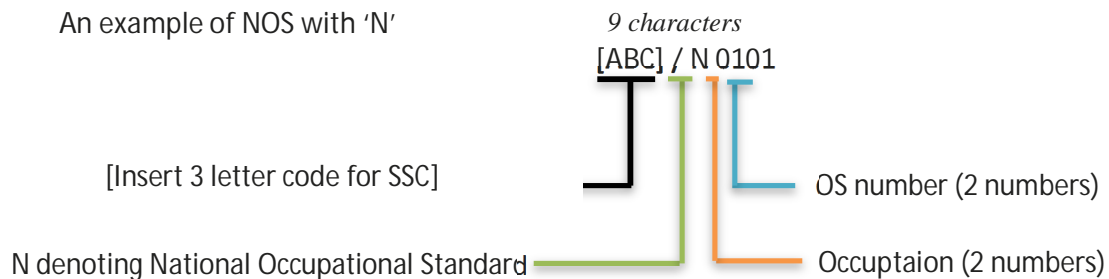
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'





Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



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 Operator Coal Handling - Thermal Power Generation

Qualification Pack PSS/Q1004

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 | Marks Allocation | | | |
|---|---|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| 1. PSS/N1004 Operations of Coal Handling Plant | PC1. understand coal handling plant right from arrival of wagon, unloading of coal by wagon tippler or merry go round, transportation of coal to appropriate locations, coal crushing, coal management etc. | 100 | 2 | 1 | 1 |
| | PC2. understand various equipment and functioning of the entire coal handling plant including key equipments like Wagon tippler, conveyor belts, stacker reclaimer, coal crushing equipment, beetle charges, hoppers, Overhang Bed Magnetic Separators, inline magnetic separators etc. | | 2 | 1 | 1 |
| | PC3. ensure proper operations of equipments such as conveyors, crushers, dozers and loaders | | 3 | 1 | 2 |
| | PC4. know about the operations and functioning of coal unloading system viz merry go round and wagon tippler | | 3 | 1 | 2 |
| | PC5. ensure proper and smooth unloading of coal in merry go round system | | 3 | 1 | 2 |
| | PC6. ensure unloading of coal from wagons by placement of wagons on tippers as well as reclaiming and stockpiling of coal supplies as necessary | | 3 | 1 | 2 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|---------------------|--|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | PC7. coordinate with railways personnel on release of rail wagons | | 2 | 0 | 2 |
| | PC8. prevent spillover or wastage of coal at any place within the coal unloading area and transportation assemblies/equipment | | 2 | 0 | 2 |
| | PC9. maintain accurate daily records of coal received and unloaded | | 2 | | 2 |
| | PC10. read and use belt weigher, operate coal sampler | | 3 | 1 | 2 |
| | PC11. operate the safety equipment/instruments installed in the unloading plant | | 3 | 1 | 2 |
| | PC12. ensure removal of unwanted particulates from coal | | 3 | 1 | 2 |
| | PC13. ensure smooth operations of coal crushing plant | | 2 | | 2 |
| | PC14. monitor size of crushed coal, quantum of coal being crushed | | 3 | 1 | 2 |
| | PC15. manage coal crushing operations, monitoring of sub equipment of coal crushing plant | | 3 | 1 | 2 |
| | PC16. remove the choke of coal from hopper using appropriate methods | | 3 | 1 | 2 |
| | PC17. ensure smooth functioning of conveyor belts by continuous monitoring and escalating any issue observed to maintenance team | | 3 | 1 | 2 |
| | PC18. ensure compacting of coal by dozers and minimization of dust by sprinkling water on stored coal | | 3 | 1 | 2 |
| | PC19. ensure proper steps being undertaken to prevent fire in the coal storage area | | 3 | 1 | 2 |
| | PC20. ensure proper steps for extinguishing fire in the coal storage area | | 4 | 1 | 3 |
| | PC21. constantly monitor bunkers and storage bins for sign of overheated coal so that it can be removed before spontaneous combustion occurs. | | 4 | 1 | 3 |
| | PC22. monitor operation of stacker reclaimer and to ensure coal is stacked in an optimum and safe wayability to line up, start and monitor operations of dust removal and suppression system | | 4 | 1 | 3 |
| | PC23. ensure smooth and planned reclaiming of coal in case of coal requirement | | 3 | 1 | 2 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|---|--|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | PC24. record details of inspection accurately and clearly in required ledgers, forms and formats as per required and approved procedures | | 3 | 1 | 2 |
| | PC25. check for cuts, sways in conveyor belts and monitor jointing and clamping of belts in case of breakdown | | 4 | 1 | 3 |
| | PC26. ensure oiling and greasing of pulleys and properly monitor functioning of rollers, crushers, gearboxes and chutes | | 3 | 1 | 2 |
| | PC27. line up , start and monitor operation of vertical, horizontal and positive displacement pumps | | 3 | 1 | 2 |
| | PC28. line up , start and monitor operation of dust removal and suppression system | | 3 | 1 | 2 |
| | PC29. explain the functioning and clutches monitoring parameters of gear boxes, fluid couplings, clutches | | 3 | 1 | 2 |
| | PC30. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved | | 2 | | 2 |
| | PC31. leave the work area in a safe and tidy condition on completion of the inspection and testing activities | | 3 | 1 | 2 |
| | PC32. refer unresolved job related problems to appropriate personnel for support | | 1 | | 1 |
| | PC33. monitor the problem and keep the relevant people informed about progress or any delays in resolving the problem | | 2 | 1 | 1 |
| | PC34. handle fire and operate fire extinguishers | | 2 | 1 | 1 |
| | PC35. work effectively in dusty environment | | 2 | 1 | 1 |
| | PC36. not be allergic to coal related fumes and dust | | 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 |
| | 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 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|---------------------|---|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | 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 trenches | | 3 | 1 | 2 |
| | PC8. test any electrical equipment and system using insulated testing devices before touching them | | 3 | 1 | 2 |
| | 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 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|---------------------|--|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | 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 |
| | 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 |
| | 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 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
(Generation)



| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|--|--|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | 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 |
| PSS/N1336 Work effectively with others | PC1. accurately receive information and instructions from the relevant people 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 performing tasks in a positive manner, where required and possible | | 10 | 3 | 7 |
| | PC5. perform with 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 behaviors at the workplace | | 10 | 3 | 7 |



Qualifications Pack For Operator/Technician - Coal Handling Plant
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| Assessable Outcomes | Assessment Criteria | Marks Allocation | | | |
|---------------------|---|------------------|--------|--------|------------------|
| | | Total Marks | Out Of | Theory | Skills Practical |
| | PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict | | 10 | 3 | 7 |
| | | | 100 | 30 | 70 |