

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR POWER SECTOR

What are Occupational Standards(OS)?

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

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

Contact Us:

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

E-mail: pssc@cbip.in



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Introduction

Qualifications Pack- Technical Helper Mechanical- Thermal Power Generation

SECTOR: POWER

SUB-SECTOR: Generation

OCCUPATION: Technical Helper Mechanical- Thermal Power Generation

REFERENCE ID: PSS/Q1005

ALIGNED TO: NCO-2004/NIL

Technical Helper Mechanical- Thermal Power Generation supports and assists mechanics, machinists, welders, pipefitters, plumbers, pump operators and other mechanical craft employees; supports mechanical O&M and repair tasks.

Brief Job Description: Helps mechanical equipment operators by performing such as using, supplying or holding materials or tools, undertaking pre, during and post activity supporting work; lifting and carrying objects, oil and clean machinery equipment, cleaning workshop and work area.

Personal Attributes: Physically and mentally able to safely perform essential functions of the job. The candidate should be able to climb ladders, scaffolds, poles and towers of various heights. Also be able to crawl and work in confined spaces such as attics, large diameter pipes/fittings and crawl spaces. The candidate should be able to read, hear and understand instructions and warnings. The candidate should be able to work in loud noisy and high temperature area.



Job Details	Qualifications Pack Code	PSS/Q1005		
	Job Role	Technical Helper Mechanical- 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	Technical Helper - Mechanical	Next review date	19/07/2018
	NSQC Clearance Date	Not Applicable		

Job Role	Technical Helper Mechanical- Thermal Power Generation
Role Description	A Mechanical Helper is distinguished from technicians/mechanics, in that the former requires only an elementary knowledge of hand tools and mechanical processes and assists the latter. The work of a Mechanical Helper involves helping the mechanic/ technicians.
NSQF level	2
Minimum Educational Qualifications	10 th pass
Maximum Educational Qualifications	Not Applicable
Training (Suggested but not mandatory)	Not Applicable
Minimum Job Entry Age	18 years
Experience	Not Applicable
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> PSS/N1005 Assist in repair and maintenance of equipment and components 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



Qualifications Pack For Technical Helper Mechanical- Thermal
Power Generation



Acronyms

	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
HT	High Tension
HV	High Voltage
KV	Kilovolt
LT	Low Tension
LV	Low Voltage
PPE	Personal Protective Equipment



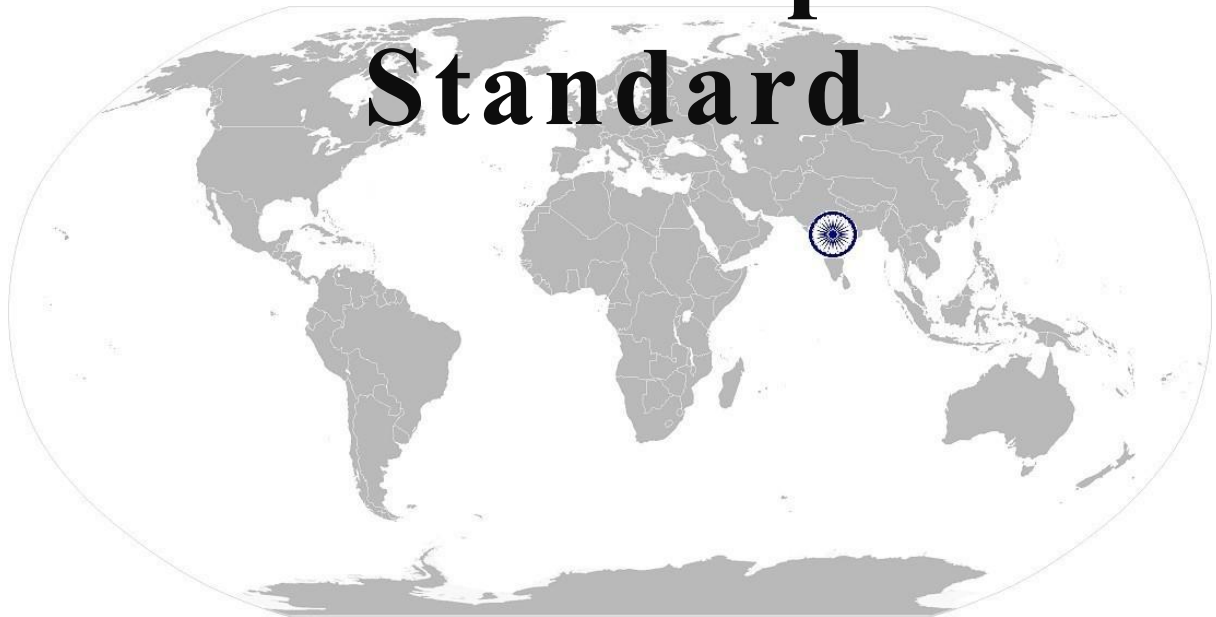
NOS
National Occupational Standards



PSS/N1005

Assist in repair and maintenance of equipment and components

National Occupational Standard



Overview

This unit covers the competencies required for technical helpers (mechanical) involved in assisting mechanics or mechanical operators in operations, repair and maintenance of equipment.



PSS/N1005

Assist in repair and maintenance of equipment and components

National Occupational Standard	Unit Code	PSS/N1005
	Unit Title (Task)	Assist in repair and maintenance of equipment and components
	Description	This unit covers the competencies required by Technical helpers (Mechanical) who help mechanics, machinists, welders, blacksmiths, pipefitters, plumbers, boiler makers, and other mechanical craft employees; performs routine mechanical maintenance and repair tasks; and does related work. The candidate will be expected to perform under supervision.
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • handling tools and equipment • assisting in repair and maintenance activity • post repair and maintenance activities
Performance Criteria(PC) w.r.t. the Scope		
	Element	Performance Criteria
	Handling tools and equipment	<p>The user/individual on the job needs to:</p> <p>PC1. display knowledge of spanners, hammer, chisels, gauge, pressure gauges, torque wrench and other basic tools required in power plant</p> <p>PC2. read ammeters, volt meters, meggars, multi-meters</p> <p>PC3. identify accurately and acquire correct tools, equipment and instruments required for various aspects of repair and maintenance activity as directed by the supervisor/team member</p> <p>PC4. ensure the tools and equipment are oiled, cleaned, well maintained, calibrated and ready for use</p> <p>PC5. determine the kind of tools, materials and equipment needed to do a job and making them readily available</p>
	Assist in repair and maintenance activities	<p>The user/individual on the job needs to:</p> <p>PC6. prepare and maintain the work area as per procedures or operational specification</p> <p>PC7. undertake preparatory and post activity works when supporting installation, commissioning, operations or maintenance</p> <p>PC8. perform tasks such as holding, handing over components, measuring, greasing, transportation, loading and unloading, etc. accurately and safely while assisting supervisor/operator/maintenance team member in carrying out O&M</p> <p>PC9. clean work area and wash parts</p> <p>PC10. differentiate between rotary parts and static parts</p> <p>PC11. demonstrate knowledge of assembling and disassembling of valves, pumps, motors and other equipment and ensuring proper working of equipment</p> <p>PC12. assess oil, air, gas, water, steam leakage</p> <p>PC13. lubricate equipment in accordance with established procedures and charts;</p>



PSS/N1005

Assist in repair and maintenance of equipment and components

	<p>check and change oil, oil filters and air filters, fuel and service buses and other vehicles; replace hoses, belts, water pumps, batteries and similar equipment and parts</p> <p>PC14. check fan belts, hoses, wiper blades and other safety equipment; check radiators and batteries, check water and antifreeze levels; check air in tyres and adjust pressure; repair flat tyres and change tyres as necessary</p> <p>PC15. follow instructions and perform tasks such as holding, handing over components, measuring, loading and unloading, etc. accurately and safely while assisting mechanics or mechanical operators in carrying out replacement of components such as radiators, hoses, fan belts, batteries, spark plugs, ignition cables, and other parts</p> <p>PC16. be capable of noticing vibrations, excessive sound, leakage etc.</p> <p>PC17. perform semi-skilled and unskilled support duties related to the installation, maintenance and repair of a wide variety of mechanical systems and equipment</p> <p>PC18. raise, lower, or position equipment, tools, and materials, using hoist, hand line, or block and tackle</p> <p>PC19. apply knowledge of chemicals/hazardous chemicals</p> <p>PC20. take precautions while working in a chemicals surrounded areas</p>
Post-repair and maintenance activities	<p>The user / individual on the job should be able to:</p> <p>PC21. leave the work area in a safe and tidy condition on completion of the repair and maintenance activities refer unresolved job related problems to appropriate personnel for support</p> <p>PC22. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. relevant standards, policies, and procedures followed in the organization relevant to own employment and performance conditions</p> <p>KB2. relevant health and safety requirements applicable in the work place</p> <p>KB3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KB4. importance of working in clean and safe environment practices and procedures</p> <p>KB5. relevant people and their responsibilities within the work area</p> <p>KB6. risk of working at high voltage levels</p>

PSS/N1005

Assist in repair and maintenance of equipment and components

<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. use and functions of the tools and equipment commonly found in machine, sheet metal, structural steel, automotive repair, and other mechanical shops</p> <p>KB2. chemicals/hazardous chemicals</p> <p>KB3. common electricity terminology e.g. current, voltage, resistance, kilowatt (kw), kilowatt hour(kwh)</p> <p>KB4. tools and equipment used in testing, repair and maintenance Tools: e.g. keys, multimeter, clamp meter, plier, screwdriver, wrench set, hammer, drilling machine, hacksaw/cutting tools, measuring tape, pulleys (force pulley with sling), tommy bar, crimping machine, round/flat file, Earth rod (discharge rod), leakage current monitoring kit</p> <p>KB5. specific health and safety precautions which must be taken when carrying out repair and maintenance work. The key precautions may include loose clothes, key chain or watch chains should not be worn; shoes with projecting nails or other types of metal parts not to be used; not to start work unless circuit is in off and earthen condition, permit to work is taken before initiating maintenance activity or equipment should be first made off and take permit to work before taking the work in hand</p> <p>KB6. need for an authorized permit to work</p> <p>KB7. hazards associated with working in a power plant and key mitigation measures e.g. live wires, faulty insulation, voltage surges, faulty and damaged equipment and components, unsecure cables, unstable ladders, insects and reptiles, and scaffolding, etc.</p> <p>KB8. how to operate power hacksaws, emery wheels, portable grinders, threading machines, drill presses, portable drills, rolls, and shears; uses pipe wrenches, sledge hammers, punches, clamps, and other hand tools</p> <p>KB9. specifications and good knowledge of nuts and bolts</p> <p>KB10. chemicals, lubricants and oils used in oiling and greasing equipment and components</p> <p>KB11. importance of ensuring that tools and equipment are suitable, well maintained, calibrated and operating effectively</p> <p>KB12. importance of following good housekeeping and fire prevention procedures</p> <p>KB13. importance of following job instructions and defined maintenance procedures</p> <p>KB14. components of generation system -valves, pumps, compressors, motor, fans, blowers, gearbox etc.</p> <p>KB15. importance of understanding abnormal sounds and vibrations in machines, coupling of pump and motor</p> <p>KB16. importance of reporting problems in a timely manner</p> <p>KB17. standard procedures on how to deal with electric shocks and electrocutions to rescue and minimize damage and harm</p>
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PSS/N1005

Assist in repair and maintenance of equipment and components

	<p>KB18. personal protective equipment (PPE) and clothing that must be worn during the inspection, repair and maintenance activity and from where can it be obtained PPE: e.g. safety helmet, safety glove, safety shoe, ear plugs, dust suppression masks, welding glasses during welding operations, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), safety rope, etc.</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor or engineer note down observations (if any) related to the process
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. read dimensions read instructions posted on the equipment/walls/sign boards etc.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA3. discuss problems faced SA4. communicate properly
A. 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. take decisions with systematic course of actions and/or response.
	Plan and Organize
	The user/individual on the job needs to know and understand: SB2. planning and organization of tasks to meet deadlines.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. build customer relationships and use customer centric approach.
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. 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: SB5. work systematically and logically to resolve the issues and identify causation and anticipate unexpected results. SB6. quick approach and solution towards faults repairing.
Critical Thinking	



PSS/N1005

Assist in repair and maintenance of equipment and components

	The user/individual on the job needs to know and understand how to: SB7. critically evaluate operation parameters in relation to system normality develop a holistic and comprehensive profile of grid station on segregated discrete process.
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NOS Version Control

NOS Code	PSS/N1005		
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	Technical Helper: Mechanical	Next review date	19/07/2018

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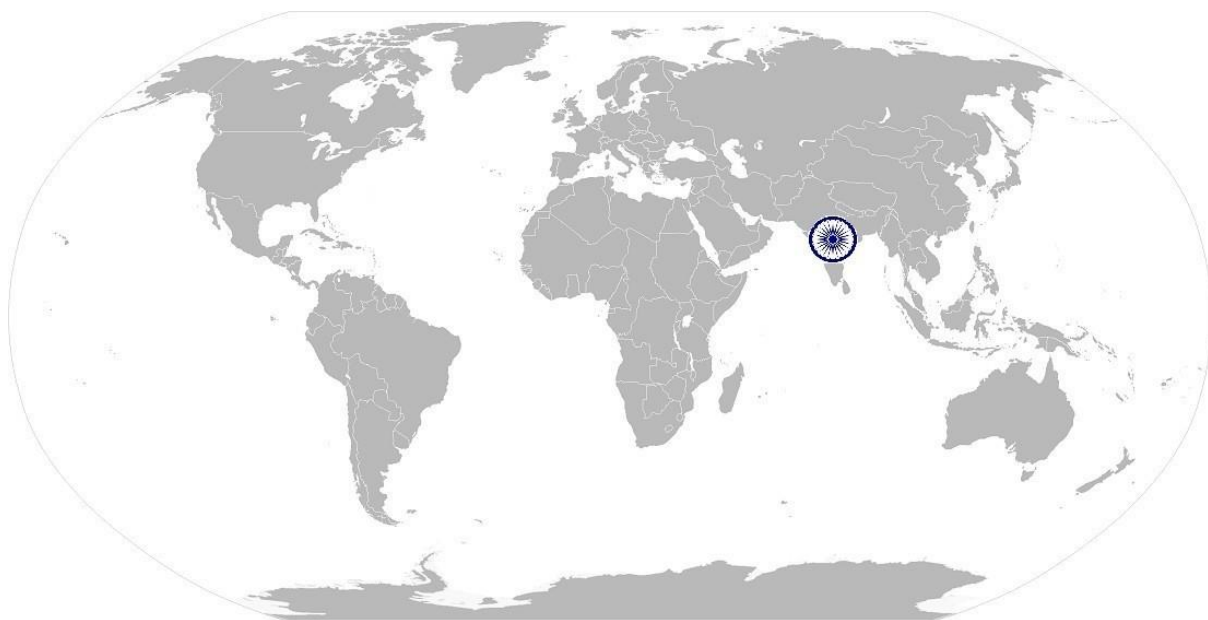
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PSS/N2001

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

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	<p>This unit/task covers the following:</p> <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

	<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>
Fire safety	<p>The user/individual on the job needs to:</p> <p>PC23. use the various appropriate fire extinguishers on different types of fires correctly</p> <p>PC24. distinguish types of fire</p> <p>PC25. demonstrate rescue techniques applied during fire hazard</p> <p>PC26. demonstrate good housekeeping in order to prevent fire hazards</p> <p>PC27. demonstrate the correct use of a fire extinguisher</p>
Emergencies, rescue and first-aid procedures	<p>The user/individual on the job needs to:</p> <p>PC28. demonstrate how to free a person from electrocution</p> <p>PC29. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC30. demonstrate basic techniques of bandaging</p> <p>PC31. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC32. perform and organize loss minimization or rescue activity during an accident in real or simulated environments</p> <p>PC33. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases</p> <p>PC34. demonstrate the artificial respiration and the CPR Process</p> <p>PC35. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work</p> <p>PC36. complete a written accident/incident report or dictate a report to another person, and send report to person responsible</p> <p>PC37. demonstrate correct method to move injured people and others during an emergency</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace.</p> <p>KA2. names and location of documents that refer to health and safety in the workplace.</p>

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

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

	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: SB8. follow colleague/contractor rule-based decision making process. SB9. take decisions with systematic course of actions and/or response.
	Plan and Organize
	The user/individual on the job needs to know and understand: SB10. planning and organization of tasks to meet deadlines.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB11. build customer relationships and use customer centric approach.
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB12. seek and comprehend operation related inputs for clarification SB13. 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: SB14. work systematically and logically to resolve the issues and identify causation and anticipate unexpected results. SB15. quick approach and solution towards faults repairing.
	Critical Thinking
The user/individual on the job needs to know and understand how to: SB16. critically evaluate operation parameters in relation to system normality SB17. develop a holistic and comprehensive profile of grid station on segregated discrete process.	

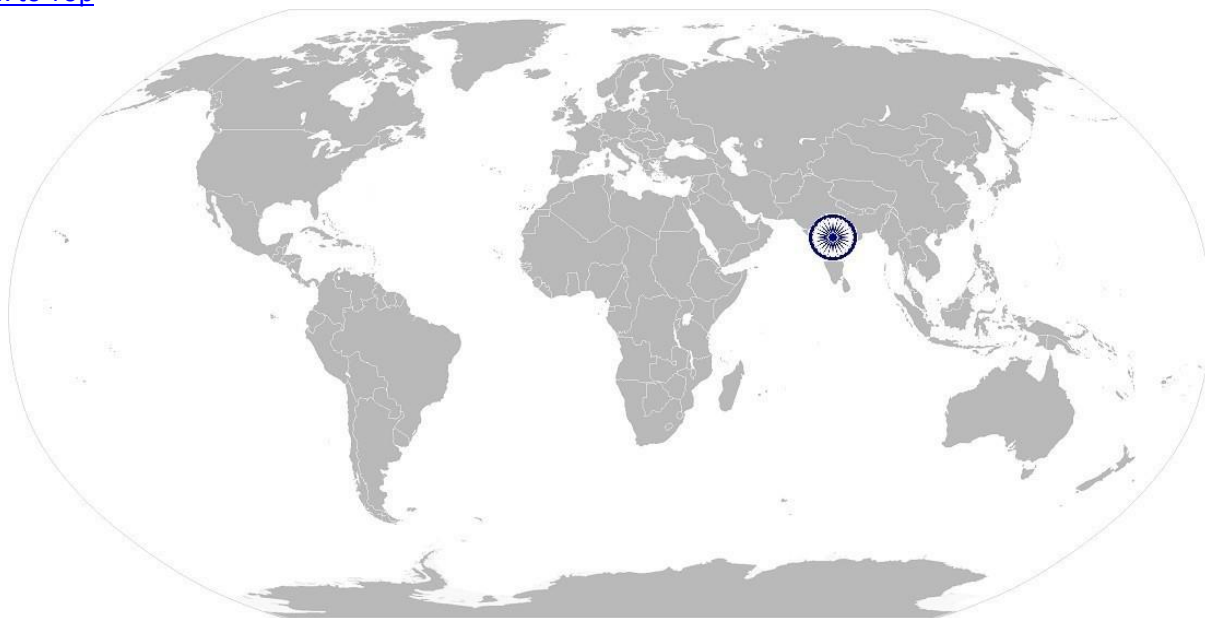


PSS/N2001 Use basic health and safety practices for power related work

NOS Version Control

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

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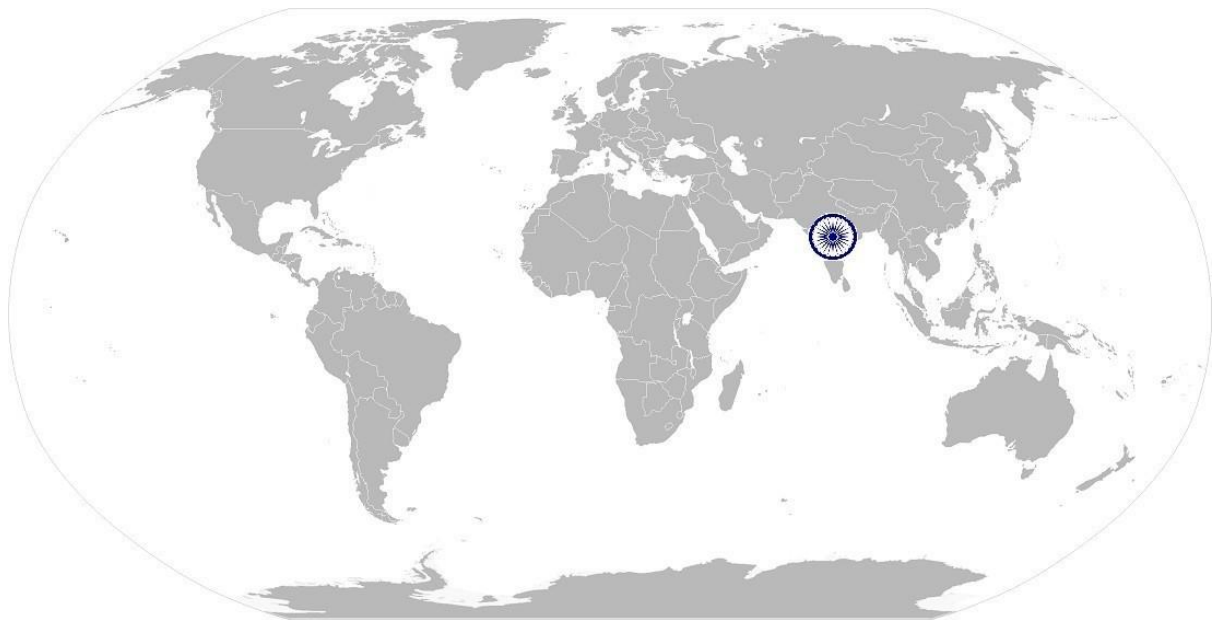
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PSS/N1336

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



PSS/N1336

Work effectively with others

National Occupational Standard

Unit Code	PSS/N1336
Unit Title (Task)	Work effectively with others
Description	<p>This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace.</p> <p>These cover areas such as communication etiquette, discipline, listening, handling conflict and grievances.</p>
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> working with others
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Working with others	<p>The user/individual on the job should be able to:</p> <p>PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by 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 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>



PSS/N1336

Work effectively with others

B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. various categories of people that one is required to communicate and co-ordinate with in the organization</p> <p>KB2. importance of effective communication in the workplace</p> <p>KB3. importance of teamwork in organizational and individual success</p> <p>KB4. various components of effective communication</p> <p>KB5. key elements of active listening</p> <p>KB6. value and importance of active listening and assertive communication</p> <p>KB7. barriers to effective communication</p> <p>KB8. importance of tone and pitch in effective communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer</p> <p>KB11. importance of ethics for professional success</p> <p>KB12. importance of discipline for professional success</p> <p>KB13. what constitutes disciplined behavior for a working professional</p> <p>KB14. common reasons for interpersonal conflict</p> <p>KB15. importance of developing effective working relationships for professional success</p> <p>KB16. how to express and address grievances appropriately and effectively</p> <p>KB17. importance and ways of managing interpersonal conflict effectively</p>
Skills (S) (Optional)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the officer incharge. SA2. note down observations (if any) related to the operation/maintenance.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. read and interpret the process required for different types of manuals SA4. read and interpret the flowchart of all parts of an assembly. SA5. read manuals and documents to understand the product-details & how they can be used.
	Oral Communication (Listening and Speaking skills)
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB18. follow colleague/contractor rule-based decision making process.



PSS/N1336

Work effectively with others

	SB19. take decisions with systematic course of actions and/or response.
	Plan and Organize
	The user/individual on the job needs to know and understand: SB20. planning and organization of tasks to meet deadlines.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB21. build customer relationships and use customer centric approach.
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB22. 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: SB23. 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: SB24. 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

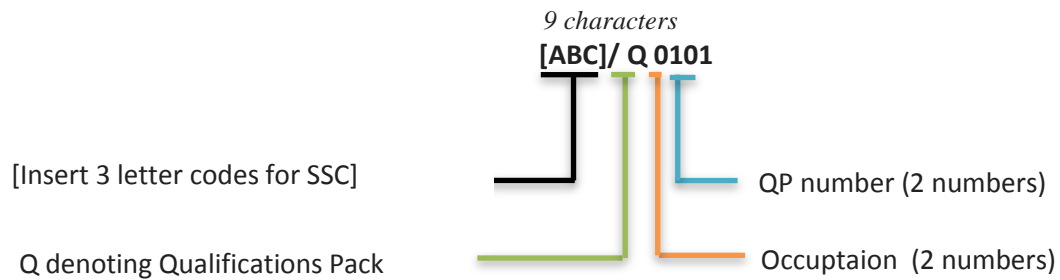
[Back to Top](#)



Annexure

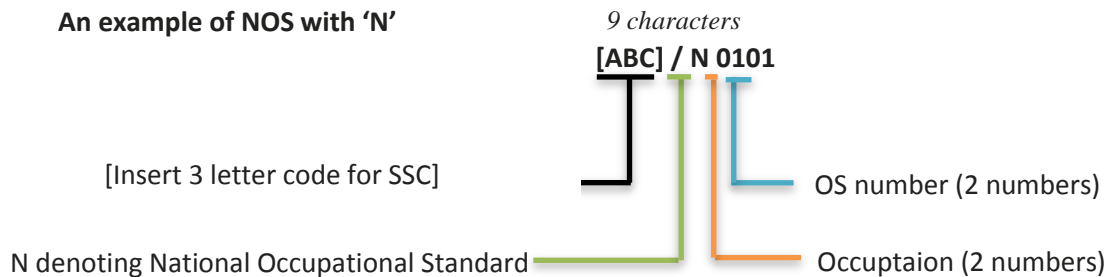
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'





Qualifications Pack For Technical Helper Mechanical-
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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 Technical Helper Mechanical- Thermal Power Generation

Qualification Pack PSS/Q1005

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	Total Marks	Out of	Theory	Skills Practical
1.PSS/N1005 Assist in maintenance activity of Mechanical equipment installed in a power generation plant	PC1. apply knowledge of spanners, hammer, chisels, gauge, pressure gauges, torque wrench and other basic tools required in power plant	100	1	1	3
	PC2. read ammeters, volt meters, meggers, multi-meters		4	1	3
	PC3. identify accurately and acquire correct tools, equipment and instruments required for various aspects of repair and maintenance activity as directed by the supervisor/team member		4	1	3
	PC4. ensure the tools and equipment are oiled, cleaned, well maintained, calibrated and ready for use		4	1	3
	PC5. determine the kind of tools, materials and equipment needed to do a job and making them readily available		4	1	3



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PC6. prepare and maintain the work area as per procedures or operational specification	4	1	3
PC7. undertake preparatory and post activity works when supporting installation, commissioning, operations or maintenance	4	1	3
PC8. perform tasks such as holding, handing over components, measuring, greasing transportation, loading and unloading, etc. accurately and safely while assisting supervisor/operator/maintenance team member in carrying out O&M	4	1	3
PC9. clean work area and wash parts	3		3
PC10. differentiate between rotary parts and static parts	3		3
PC11. apply knowledge of assembling and disassembling of valves, pumps, motors and other equipment and ensuring proper working of equipment	4	1	3
PC12. assess oil, air, gas, water, steam leakage	4	1	3
PC13. lubricate equipment in accordance with established procedures and charts; check and change oil, oil filters and air filters, fuel and service buses and other vehicles; replace hoses, belts, water pumps, batteries and similar equipment and parts	4	1	3
PC14. check fan belts, hoses, wiper blades and other safety equipment; check radiators and batteries, check water and antifreeze levels; check air in tyres and adjust pressure; repair flat tyres and change tyres as necessary	4	1	3



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PC15. follow instructions and perform tasks such as holding, handing over components, measuring, loading and unloading, etc. accurately and safely while assisting mechanics or mechanical operators in carrying out replacement of components such as radiators, hoses, fan belts, batteries, spark plugs, ignition cables, and other parts	4	1	3	
PC16. apply knowledge of tools like spanners, hammers, chisels, gauge etc.	4	1	3	
PC17. be capable of noticing vibrations, excessive sound, leakage etc.	4	1	3	
PC18. perform semi-skilled and unskilled support duties related to the installation, maintenance and repair of a wide variety of mechanical systems and equipment	6	2	4	
PC19. raise, lower, or position equipment, tools, and materials, using hoist, hand line, or block and tackle	4	1	3	
PC20. raise, lower, or position equipment, tools, and materials, using hoist, hand line, or block and tackle	4	1	3	
PC21. apply knowledge of chemicals/hazardous chemicals	6	2	4	
PC22. take precautions while working in a chemicals surrounded areas	4	1	3	
PC23. leave the work area in a safe and tidy condition on completion of the repair and maintenance activities refer unresolved job related problems to appropriate personnel for support	4	1	3	
PC24. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem	6	2	4	
	Total	100	25	75



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**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
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



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PC13. state location of general health and safety equipment in the workplace	2	0	2
PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder	2	0	2
PC15. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa	2	1	1
PC16. inspect Grid station and its equipment routinely for any signs of oil and water leakage	2	0	2
PC17. store flammable materials and machine lubricating oil safely and correctly	2	0	2
PC18. check that the emission and pollution control devices are working properly in line with environmental policy standards	3	1	2
PC19. apply good housekeeping practices at all times	3	1	2
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	3	1	2



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	order to prevent fire hazards			
	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
	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



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	PC37. 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 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 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