

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR POWER SECTOR

What are Occupational Standards (OS)?

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

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

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Introduction

Qualifications Pack- Operator Water treatment - Thermal Power Generation

SECTOR: POWER

SUB-SECTOR: Generation

OCCUPATION: Operator Water Treatment- Thermal Power Generation

REFERENCE ID: PSS/Q1006

ALIGNED TO: NCO-2004/NIL

Operator Water treatment - Thermal Power Generation maintains a variety of plant equipment in connection with the operation of waste water/raw water treatment plant, assists maintenance team, Individual is responsible for ensuring timely upkeep of systems and equipment that remove pollutants in wastewater and performs related work as required.

Brief Job Description: The incumbent in the job will comply with and practice proper equipment operation procedures, conduct routine checks, operates laboratory tests in order to operate and make necessary changes to the processes and identify maintenance requirements for the treatment plant to ensure operational components are kept in good working order.

Personal Attributes: The candidate should be able to read, write and communicate effectively and clearly with a number of stakeholders. The candidate will have to provide necessary support to colleagues for effective on-the-job performance. The candidate should demonstrate patience and ability to work and inspect work in detail. The candidate shall not be allergic to fumes or chemicals.



Qualifications Pack For Operator - Water Treatment Plant
(Generation)



Job Details	Qualifications Pack Code		PSS/Q1006	
	Job Role		Operator Water treatment - 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		

Job Role	Operator Water treatment - Thermal Power Generation
Role Description	To operate in the plant and maintenance of variety of plant equipment in ensuring timely upkeep of systems and equipment that remove pollutants in wastewater and perform related work as required.
NSQF level	4
Minimum Educational Qualifications	ITI (with 10+2 science background)
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/N1006 Perform operations of Water Treatment 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



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



Qualifications Pack For Operator- Water Treatment Plant
(Generation)

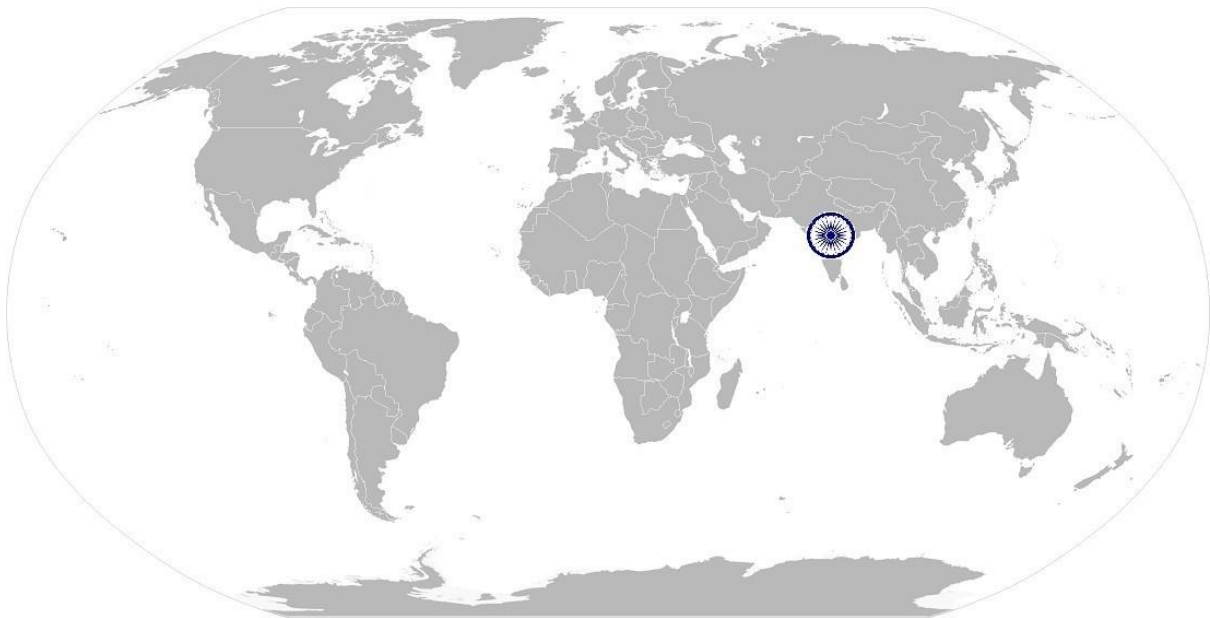


Acronyms

Technical Knowledge	Technical Knowledge is the specific domain knowledge needed to accomplish the task in combination with other competencies. It is usually coined with specifically designated roles and responsibilities.
Core Skills/Generic Skills	Core Skills or Generic Skills as set are group of skills. It is 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
CWT	Circulating Water Treatment
C&I	Control and Instrumentation
DM	De-Mineralization
ET	Effluent Treatment
KV	Kilovolt
KVA	Kilovolt Ampere
Kw	Kilowatt
Kwh	Kilowatt hour
O&M	Operations and Maintenance
PT	Pre-Treatment
Ph	Potential of Hydrogen
PAC	Poly Aluminum Chloride
PPE	Personal Protective Equipment
WTP	Water Treatment Plant



National Occupational Standard



Overview

This unit covers the competencies required for operational activities of Water Treatment plant.



PSS/N1006

Perform operations of Water Treatment Plant

National Occupational Standard	Unit Code	PSS/N1006
	Unit Title (Task)	Perform operations of Water Treatment Plant
	Description	This unit covers the competencies required for operational know-how of water treatment plant. This includes complying with and practicing proper equipment clearance procedures, ensuring maintenance of the treatment plant systems, operating the filtering and chemical treatment processes, monitoring operating conditions, meters, and gauges, collecting and testing water and sewage samples, recording meter and gauge readings and operational data and operating equipment to purify and clarify water or to process or dispose of sewage.
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • understanding and ensuring smooth operation of all equipment of Water Treatment Plant • post-operation and inspection activities
Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria	
Understand and ensure smooth operation of all equipment of Water Treatment Plant	<p>The user/individual on the job needs to:</p> <p>PC1. work on all equipment in the water treatment plant viz. valves, flash mixer, clariflocculator tank, filter bed, sump, Demineralized water plant etc.</p> <p>PC2. carry out timely maintenance of the treatment plant systems</p> <p>PC3. know operations of filtering and chemical treatment equipment</p> <p>PC4. monitor operating conditions, meters, and gauges</p> <p>PC5. record meter and gauge readings and operational data</p> <p>PC6. operate equipment to purify and clarify water or to process or dispose of sewage</p> <p>PC7. assist relevant people in preparing work order reports</p> <p>PC8. assist relevant people in keeping daily logs and maintaining records</p> <p>PC9. know about dissolved impurities and undissolved impurities. and methods for removing/cleaning the same</p> <p>PC10. know about temporary hardness and permanent hardness and methods for removing/cleaning the same</p> <p>PC11. know about physical impurities and organic impurities and methods for removing/cleaning the same</p> <p>PC12. know about the types of equipment installed viz. peripheral clariflocculator tank, central turbine clariflocculator tank</p> <p>PC13. know about the types of filter bed viz. gravity filter beds, pressure filter beds</p> <p>PC14. know about ion exchangers viz. anion exchanger, cation exchanger and mixed bed exchanger</p> <p>PC15. know about the methods to neutralise waste water</p> <p>PC16. know about key chemicals and their properties used in water treatment plant</p> <p>PC17. operate and empty/cleaning process of sludge tank</p>	



PSS/N1006


Perform operations of Water Treatment Plant

	<p>PC18. operate pumps, valves etc.</p> <p>PC19. identify/notice sounds in pumps, air leakage, leakage in pumps, faults in valves, soil in filter beds</p> <p>PC20. treat raw/waste water and chemicals used in water treatment plant</p> <p>PC21. know about the hazards of chemicals used in water treatment plant</p> <p>PC22. prepare and maintain the work area as per procedure or operation specification</p> <p>PC23. possess basic knowledge of working on computer</p>
Post-operation and inspection activities	<p>The user / individual on the job should be able to:</p> <p>PC24. assist relevant people in conducting regular inspections of the water treatment plant,</p> <p>PC25. record details of inspection accurately and clearly in required ledgers, forms and formats as per required and approved procedures</p> <p>PC26. record details and fill up logbooks by possibly working in shifts</p> <p>PC27. 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>PC28. leave the work area in a safe and tidy condition on completion of the inspection and testing activities</p> <p>PC29. refer unresolved job related problems to appropriate personnel for support</p> <p>PC30. monitor the problem and keep the relevant people informed about progress or any delays in resolving the problem</p> <p>PC31. identify potential safety hazards, including fire, chlorine leakage or explosive hazards and take immediate action to correct the hazard, ensuring the safety of working personnel and report the situation to relevant personnel on site.</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The user/individual should have knowledge and understanding of</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the organization relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. how to engage with specialists for support in order to resolve incidents and service requests</p>



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Perform operations of Water Treatment Plant

	<p>KA5. relevant legislation, standards, policies, and procedures followed in the organization relevant to own employment and performance conditions</p> <p>KA6. relevant health and safety requirements applicable in the work place</p> <p>KA7. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA8. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA9. importance of working in a clean environment and safe practices and procedures</p> <p>KA10. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA11. relevant people and their responsibilities within the work area</p> <p>KA12. escalation matrix and procedures for reporting work and employment related issues</p>
<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. chemical properties of water viz., pH, turbidity</p> <p>KB2. WTP schemes and their symbols </p> <p>KB3. water chemistry</p> <p>KB4. types of impurities in water: dissolved & undissolved impurities and their removal processes</p> <p>KB5. water sampling and testing techniques, inspection procedures</p> <p>KB6. chemical (cationic, anionic & mixed) and physical impurities (pH, turbidity) present in water</p> <p>KB7. operations of various units in a water treatment system such as DM, PT, CWT, chlorination system & ET plants</p> <p>KB8. chemicals used in plant (chlorine, PAC), process of sedimentation and desludging carried out in clariflocculator tank (types: Peripheral & Central Turbine)</p> <p>KB9. filters used in treatment plant. Filter types: gravity filter beds, pressure filter beds</p> <p>KB10. regular and periodic inspection for unusual sound in pumps, leakages in pipes, soil in filter beds, back wash of filter beds</p> <p>KB11. process of de-mineralization (DM) carried out in DM plant</p> <p>KB12. ion exchangers used in DM plant, types: cation exchanger, anion exchanger, mixed exchanger</p> <p>KB13. mechanical, plumbing, heating and electrical systems</p> <p>KB14. water plant operation and maintenance including pumps, valves, chemical treatment systems, etc.</p>



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Perform operations of Water Treatment Plant

	<p>KB15. water and sewer distribution and collection systems including pipes, water-mains, manholes, hydrants, etc.</p> <p>KB16. specific health and safety precautions which must be taken when carrying out water treatment plant equipment's inspection work</p> <p>KB17. operating guidelines and ensuring plant operations are in compliance with operating guidelines (for e.g. Knowledge of norms under gas rules)</p> <p>KB18. tools and equipment used in testing, repair and maintenance including Plier, Screwdriver, Wrench set, Hammer, Drilling machine, Measuring tape, Tommy bar, (discharge rod), leakage current monitoring kit</p> <p>KB19. isolation of system during emergency situations and steps to be taken</p> <p>KB20. importance of leaving the work area and equipment in a safe and clean condition on completion of the repair and maintenance activities</p> <p>KB21. importance of reporting problems in a timely manner</p> <p>KB22. personal protective equipment (PPE) and clothing that must be worn during the 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 by the in-charge of work</p> <p>SA2. 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</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:</p> <p>SA6. reading and understanding of written sentences and paragraphs</p> <p>SA7. reading of Metric System for all measurements</p> <p>SA8. interpreting the process required for performing of work</p> <p>SA9. reading and interpreting the rules and methods</p> <p>SA10. reading equipment manuals and understanding the equipment operation and process requirement</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>SA11. perform effective oral communication with team and other staff members</p> <p>SA12. communicate effectively with voice modulation, tone of voice and eye contact</p> <p>SA13. use good body language for oral communication</p> <p>SA14. discuss task lists, schedules and activities</p>



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B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make work related judgments appropriate SB2. identifying 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 how to: SB7. identify problems and review related information to develop and evaluate options and implement solutions SB8. perform to solve the problems SB9. monitor problem solving to take corrective action with individuals and organizations 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 escalating issues related to maintenance to maintenance department
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 products based on segregated discrete process stages	



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Perform operations of Water Treatment Plant

NOS Version Control

NOS Code	PSS/N1006		
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 Water Treatment Plant	Next review date	19/07/2018

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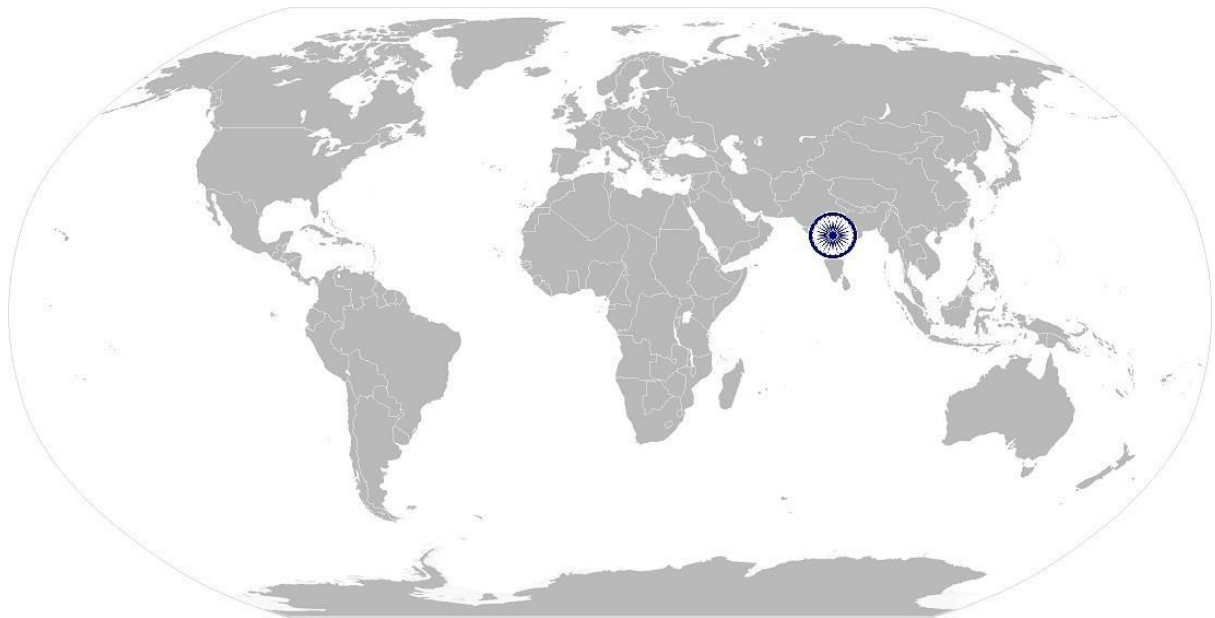
NOS
National Occupational Standards



PSS/N2001

Use basic health and safety practices for power related work

National Occupational Standard



Overview

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



NOS

National Occupational Standards



N.S.D.C

National Skill Development Corporation

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

National Occupational Standard	Unit Code	PSS/N2001
	Unit Title (Task)	Use basic health and safety practices for power related work
	Description	This unit covers health, safety and security for power related work. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment. It covers responsibilities towards self, others, assets and the environment. .
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> health and safety fire safety emergencies, rescue and first-aid procedures
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Health and safety	<p>The user/individual on the job needs to:</p> <p>PC1. use protective clothing/equipment for specific tasks and work conditions.</p> <p>PC2. state the name and location of people responsible for health and safety in the workplace</p> <p>PC3. state the names and location of documents that refer to health and safety in the workplace</p> <p>PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace</p> <p>PC5. follow electrical safe working procedures such as Tag out/Lock out and display PTW (Permit To Work),</p> <p>PC6. follow warning signs (danger, out of service, etc.) while working with electrical systems</p> <p>PC7. use standard safe working practices when working at heights, confined areas and trenches</p> <p>PC8. test any electrical equipment and system using insulated testing devices before touching them</p> <p>PC9. ensure positive isolation of electrical equipment & system as per given standards</p> <p>PC10. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed</p> <p>PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others</p> <p>PC12. state methods of accident prevention in the work environment of the job role</p> <p>PC13. state location of general health and safety equipment in the workplace</p> <p>PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladder</p> <p>PC15. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa</p> <p>PC16. inspect Grid station and its equipment routinely for any signs of oil and water leakage</p> <p>PC17. store flammable materials and machine lubricating oil safely and correctly</p>



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

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

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

<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>



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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.
	Decision Making
B. Professional Skills	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

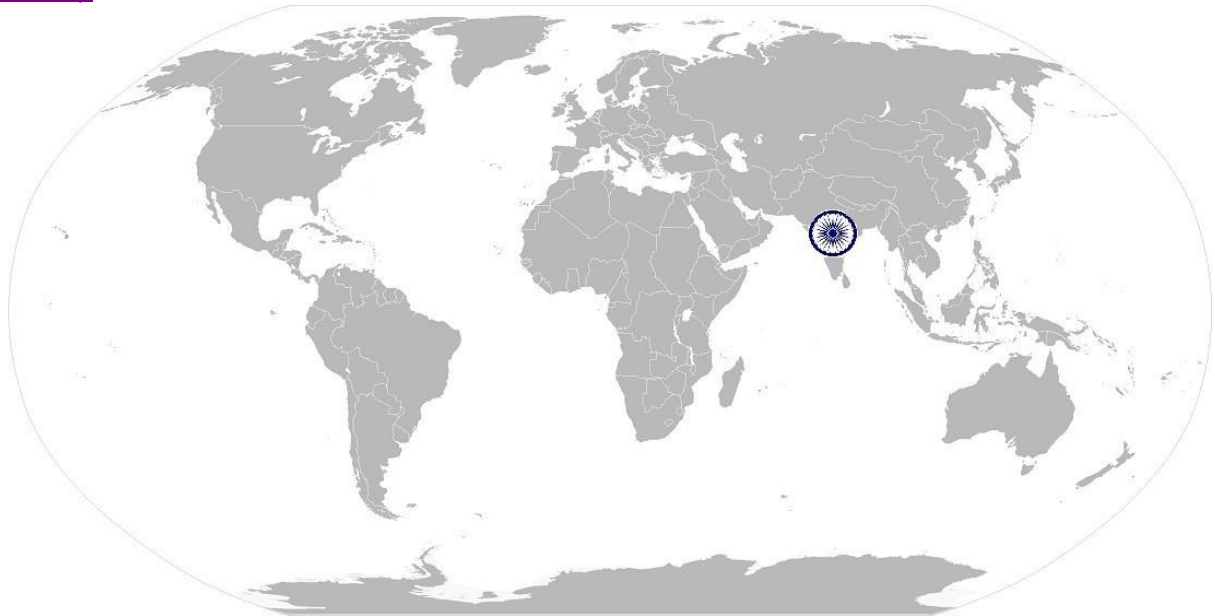


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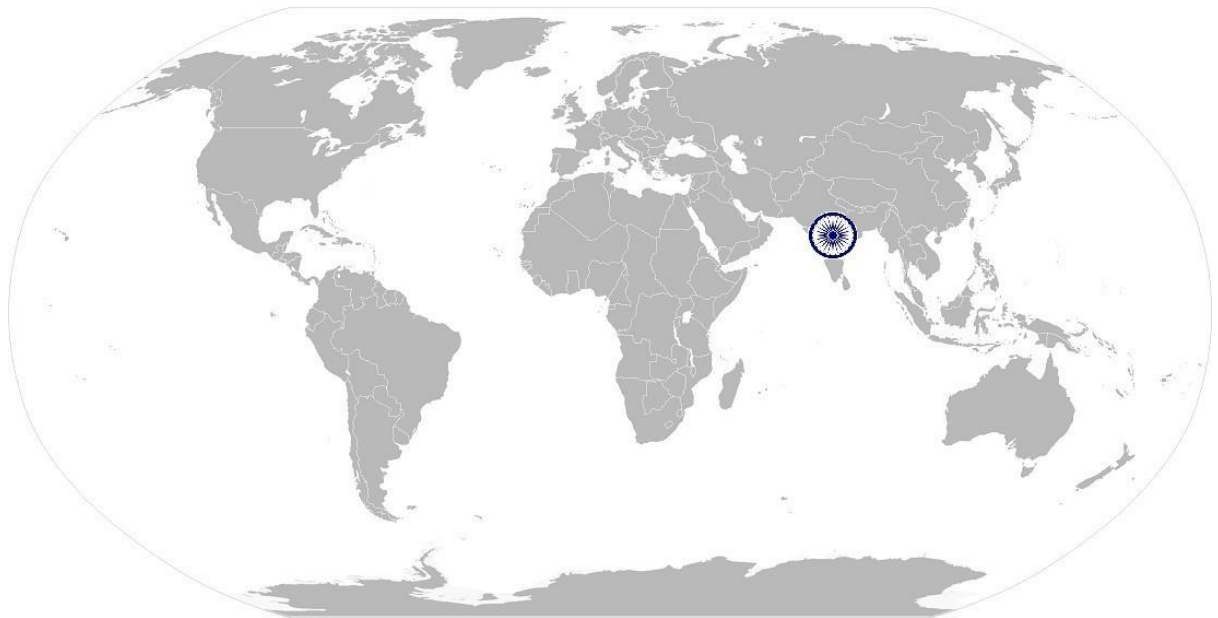
NOS Code	PSS/N2001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	04/06/2016
Industry Sub-sector	Generation, Transmission & Distribution	Last reviewed on	19/07/2016
Occupation	Technician	Next review date	19/07/2018

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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 supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by performing tasks in a positive manner, where required and possible</p> <p>PC5. perform with others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. display appropriate communication etiquette while working</p> <p>PC7. display active listening skills while interacting with others at work</p> <p>PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. demonstrate responsible and disciplined behavior at the workplace</p> <p>PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. legislation, standards, policies, and procedures followed in the 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

<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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	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

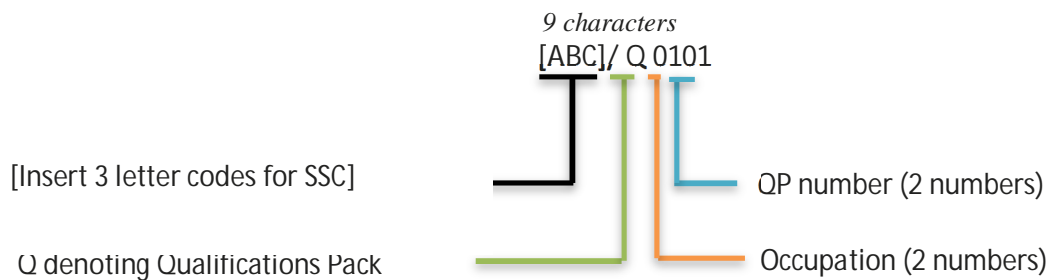
[Back to Top](#)



Annexure

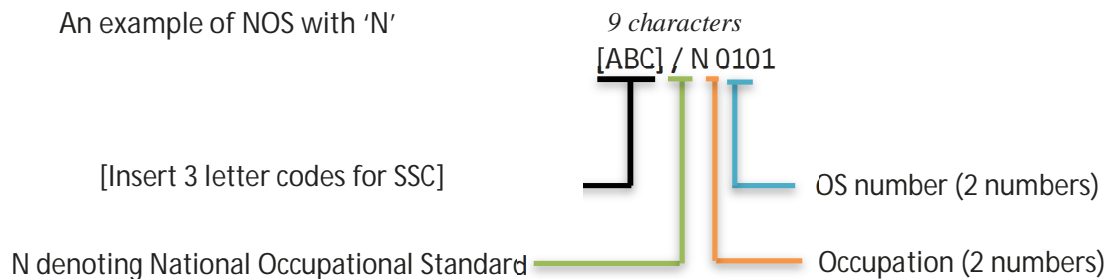
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'





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 Water treatment - Thermal Power Generation

Qualification Pack PSS/Q1006

Sector Skill Council Power

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessable Outcomes	Assessment Criteria for Outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. PSS/N1006 Operations of Water Treatment Plant	PC1. work on all equipment in the water treatment plant viz. valves, flash mixer, Clariflocculator tank, filter bed, sump, Demineralized water plant etc.	100	2	1	1
	PC2. carry out timely maintenance of the treatment plant systems		2	1	1
	PC3. know operations of filtering and chemical treatment equipment		4	1	3
	PC4. monitor operating conditions, meters, and gauges		4	1	3
	PC5. record meter and gauge readings and operational data		4	1	3
	PC6. operate equipment to purify and clarify water or to process or dispose of sewage		4	1	3
	PC7. assist relevant people in preparing work order reports		4	1	3



Qualifications Pack For Operator Water Treatment Plant
(Generation)



PC8.	assist relevant people in keeping daily logs and maintaining records
PC9.	know about dissolved impurities and undissolved impurities. and methods for removing/cleaning the same
PC10.	know about temporary hardness and permanent hardness and methods for removing/cleaning the same
PC11.	know about physical impurities and organic impurities and methods for removing/cleaning the same
PC12.	know about the types of equipment installed viz. peripheral clariflocculator tank, central turbine clariflocculator tank
PC13.	know about the types of filter bed viz. gravity filter beds, pressure filter beds
PC14.	know about ion exchangers viz. anion exchanger, cation exchanger and mixed bed exchanger
PC15.	know about the methods to neutralize waste water
PC16.	know about key chemicals and their properties used in water treatment plant
PC17.	operate and empty/cleaning process of sludge tank
PC18.	operate pumps, valves etc.
PC19.	identify/notice sounds in pumps, air leakage, leakage in pumps, faults in valves, soil in filter beds
PC20.	treat raw/waste water and chemicals used in water treatment plant
PC21.	know about the hazards of chemicals used in water treatment plant

4	1	3
2	1	1
2	1	1
2	1	1
2	1	1
2	1	1
2	1	1
3	1	2
3	2	1
4	1	3
4	1	3
3	0	3
4	1	3
3	1	2



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	PC22.	prepare and maintain the work area as per procedure or operation specification		3	1	2
	PC23.	possess basic knowledge of working on computer		4	1	3
	PC24.	assist relevant people in conducting regular inspections of the water treatment plant,		3	1	2
	PC25.	record details of inspection accurately and clearly in required ledgers, forms and formats as per required and approved procedures		3	1	2
	PC26.	record details and fill up logbooks and could work in shifts		3	1	2
	PC27.	deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved		4	0	4
	PC28.	leave the work area in a safe and tidy condition on completion of the inspection and testing activities		5	1	4
	PC29.	refer unresolved job related problems to appropriate personnel for support		5	0	5
	PC30.	monitor the problem and keep relevant people informed about progress or any delays in resolving the problem		2	0	2
	PC31.	identify potential safety hazards, including fire, chlorine leakage or explosive hazards and take immediate action to correct the hazard, ensuring the safety of working personnel and report the situation to relevant personnel on site.		3	1	2
				100	30	70
2.	PSS/N2001 Use basic health and	PC1. use protective clothing/equipment for specific tasks and work conditions.	100	3	0	3



Qualifications Pack For Operator Water Treatment Plant
(Generation)



safety practices for power related work	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
	PC13.	state location of general health and safety equipment in the workplace	2	0	2



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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 order to prevent fire hazards	3	1	2
PC27. demonstrate the correct use of a fire extinguisher	3	1	2



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(Generation)



	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
	PC37. demonstrate correct method to move injured people and others during an emergency		3	1	2
			100	24	76
3. PSS/N1336 Work	PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	3	7



Qualifications Pack For Operator Water Treatment Plant
(Generation)



effectively with others	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 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 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