QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR POWER SECTOR

Contents

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

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Introduction

Qualifications Pack- Lineman Construction (Distribution)

SECTOR: POWER

SUB-SECTOR: Distribution

OCCUPATION: Lineman

REFERENCE ID: PSS/ Q 0108

ALIGNED TO: NCO-2004/ NIL

Lineman Construction (Distribution) constructs overhead and underground power distribution systems.

Brief Job Description: The incumbent in the job will construct and erect steel, wood, laminate and concrete poles, structures and other related hardware. They install, overhead and underground powerlines and cables, and other associated equipment such as insulators, conductors, lightning arrestors, switches, transformers and lighting systems.

Personal Attributes: Physically and mentally able to safely perform essential functions of the job. This will also include differently abled people who can perform the job with or without reasonable accommodations (modified practices.) The candidate should be able to climb ladders, scaffolds, poles and towers of various heights. Also able to crawl and work in confined spaces such as attics, manholes and crawlspaces.The candidate should be able to read, hear and understand instructions and warnings.

Job Details

Qualifications Pack Code	**PSS/ Q 0108**		
Job Role	**Lineman Construction (Distribution)**		
Credits (NSQF)	**TBD**	**Version number**	**1.0**
Sector	**Power**	**Drafted on**	**26/03/15**
Sub-sector	**Distribution**	**Last reviewed on**	**26/03/15**
Occupation	**Lineman**	**Next review date**	**26/03/17**

Job Role	**Lineman Constrution (Distribution)**
Role Description	Lineman Construction constructs, overhead and underground power distribution systems
NSQF level	4
Minimum Educational Qualifications	8th
Maximum Educational Qualifications	NA
Training (Suggested but not mandatory)	Electrical - 6 months
Experience	2 years as technical helper/apprenticeship
Applicable National Occupational Standards (NOS)	**Compulsory:** 1. PSS N 0106 (Erection and maintenance of Power Distribution Lines) 2. PSS N 0108 (Laying of underground and AB cables) 3. PSS/ N 2001 (Use basic health and safety practices for power related work) 4. CSC/ N 1336 (Work effectively with others) **Optional:** N.A.
Performance Criteria	As described in the relevant OS units

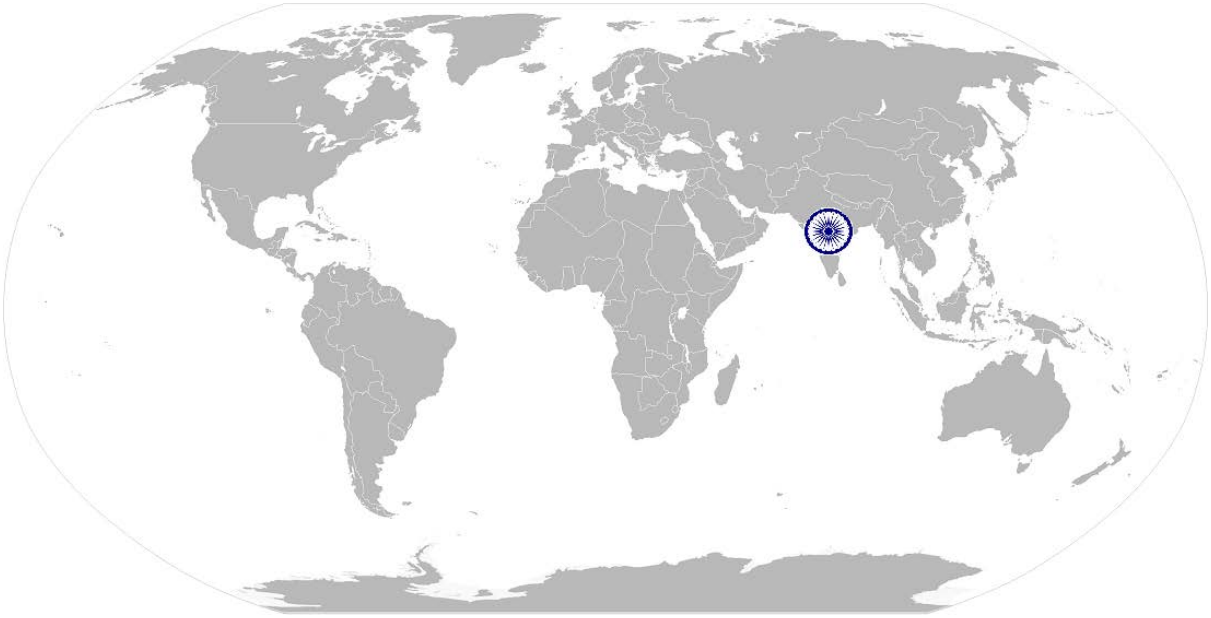
Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
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 NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
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.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.

Acronyms

Keywords /Terms	Description
T&D	Transmission and Distribution
REC	Rural Electricfication Corporation
AB Cables	Aerial Bunched Cables
HT	Hight Tension
LT	Low Tension
HV	High Voltage
LV	Low Voltage
BDV	Breakdown Voltage
ULF	Ultra Low Frequency
VLF	Very Low Frequency
OPGW	Optical Groundwire
KV	Kilovolt

National Occupational Standard



Overview

This unit covers the competencies required for erection of Power Distribution Lines, inspection and commissioning of these lines. It also covers the respective health and safety competencies required to perform such operations.

PSS/ N 0106: Erection of Power Distribution Lines

National Occupational Standard

Unit Code	**PSS/ N 0106**
Unit Title (Task)	**Erection and commissioning of Power Distribution Lines**
Description	This unit covers the competencies required technicians to erect and commissioning for Power Distribution Lines. This includes working with the crew to install poles, dismantle poles and lay wiring, handling of tools and equipment for installation and carrying out necessary tasks in a safe, efficient and effective manner. The candidate will be expected to perform mostly independently with little or no supervision and as per job specifications.
Scope	This unit/task covers the following: • Working safely • Prepare for erection of Power Distribution Lines • Erect Power Distribution Lines • Post erection activities

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Working safely	The user / individual on the job should be able to: PC1. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for electrical and related operations PC3. work following laid down procedures and instructions PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location PC5. ensure work area is clean and safe from hazards before and after the job is completed
Prepare for erection of Power T&D lines	The user / individual on the job should be able to: PC6. identify job requirements for specific operations as per instructions given from valid sources **Valid sources:** job instruction sheet/job card; work drawings; supervisor/in-charge PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications PC8. ensure equipment and tools required for Distribution installation work are identified, acquired, calibrated, suitable and approved for use PC9. identify, estimate and acquire correct materials required for the installation work PC10. ensure loading and unloading operations for pole parts in a safe and efficient manner

PSS/ N 0106: Erection of Power Distribution Lines

	PC11. identify circuit for lock-out and tagging, and recognize other equipment or abnormal conditions that may present a hazard PC12. eliminate hazards by using methods such as de-energizing, grounding and removing backfeed potential
Erect or remove Power T&D lines	The user / individual on the job should be able to: PC13. determine pole location(s) as per approved procedures PC14. ensure excavation operations are carried out with the help of ground crew for pole setting template, as per requirement and specifications, in a safe and efficient manner PC15. perform pole erection procedures as per requirements and specifications, in a safe and efficient manner PC16. install grounding for pole installation where required and cross arm fixing to the pole before erection PC17. ensure poles set to proper depth, and properly aligned PC18. install pole guys and anchors as required, as per standard procedure PC19. ensure pit filling and concreting is done as per requirement, as correct procedures PC20. follow applicable construction standards e.g. REC construction standards, for carrying out the erection procedures PC21. perform stay wire assembly as per requirements and specifications, safely and efficiently PC22. perform pole dismantling procedure where required PC23. install travelers on poles or insulators PC24. temporarily run conductor/rope through travelers to reduce friction when sagging PC25. attach pulling equipment to conductor/rope PC26. set up and operate stringing equipment when using tension stringing method PC27. carry out conductor stringing procedures, paving conductor on the ground along the pole taking into account permissible span length and sagging PC28. transfer conductor from travelers to insulators PC29. install dampers, spacers, aerial markers and armour rods according to company standards PC30. secure conductor using clamps or ties PC31. perform post-installation procedures for ensuring clean and safe environment in the work and surrounding area
Commissioning	The user / individual on the job should be able to: PC32. thoroughly check the line for clearances PC33. check guarding and stays for correctness and suitability PC34. install warning devices and signages PC35. inspect the pole and related components to check if it is as per specification and without defects PC36. clear the pole for commissioning as per standard procedure
	The user / individual on the job should be able to:

Post Erection activities	PC37. remove the waste components safely and correctly PC38. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved PC39. shut down and store equipment to a safe condition on completion of the activities PC40. leave the work area in a safe and tidy condition on completion of the erection activities PC41. refer unresolved job related problems to appropriate personnel for support PC42. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. relevant health and safety requirements applicable in the work place KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities KA4. reporting structure, inter-dependent functions, lines and procedures in the work area KA5. how to engage with specialists for support in order to resolve incidents and service requests KA6. importance of working in clean and safe environment practices and procedures KA7. relevant people and their responsibilities within the work area KA8. escalation matrix and procedures for reporting work and employment related issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. standards and specifications for stringing of overhead T&D line including accessories KB2. basic elements of electricity **Elements:** e.g. current, voltage, conductor relationships, KWI KB3. kinds of tools and equipment used in erection of poles and towers **Tools and equipment:** e.g. sling, drilling machine, climbing gear, digging tools, wrench set, hammer, tool's bag, block and tackle with rope, ratchet set, hand winch, compression tool, hydraulic cutter, boom truck, pulleys (force pulley with sling), come along clamp, max puller, tension meter KB4. Tower parts and accessories **Parts and accessories**: e.g. insulator, machine bolts, suspension clamps, strain clamp, overhead earth wires, cross-arms and braces, conductors and accessories, bolts and nuts, plates and back plates, grounding cables) KB5. specific health and safety precautions which must be taken when carrying out pole erection procedures **Safety requirements**: e.g. poles securely fastened, warning devices are installed KB6. hazards associated with carrying out pole erection processes and how they can be minimized **Hazards**: e.g. blockages and obstructions, live wires and equipment,

	unsecured ladders, etc. KB7. circuit breaker, Isolators, their purpose and functioning KB8. LT/HT transmission system and its components KB9. importance of following job instructions and defined procedures for tower/pole erection KB10. methods and procedures for pole erection **Procedures**: e.g. derrick method, gin pole method, knot tying / splicing, pole alignment KB11. stringing method and procedures to be used **Procedures**: e.g. conductor / overhead (ACSR stringing) conductor mid span joints, install stay set (guys and anchor), pole dressing (muffler coping, painting and anti-climbing devices), fitting of vibration damper and arching horn KB12. importance of correct sagging and following correct sag-tension KB13. problems that can occur with the erection operations, and how these can be overcome KB14. importance of leaving the work area and equipment in a safe and clean condition on completion of the erection activities KB15. importance of reporting problems in a timely manner KB16. methods and parameters to check quality of the components against required quality standards KB17. importance and procedures to keep record of the job including data logging, chart recording of various activities and data points like tolerance levels, etc. KB18. importance of tools and equipment to be kept in a safe and usable condition KB19. personal protective equipment (PPE) and clothing that must be worn during operational activity and from where can it be obtained
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Communication**
	The user/ individual on the job needs to know and understand how to: SA1. read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language SA2. fill up appropriate forms, activity logs/attendance sheets, as per organizational format in English and/or local language SA3. convey and share technical information clearly using appropriate language SA4. check and clarify task-related information SA5. liaise with appropriate authorities using correct protocol SA6. communicate with people in respectful form and manner in line with organizational protocol
	Numerical and computational skills
	The user/individual on the job needs to know and understand how to: SA7. undertake basic numerical computations and calculations **Numerical computations:** addition, subtraction, multiplication, division, fractions and decimals, percentages and proportions, simple ratios and averages SA8. identify various basic, compound and solid shapes as per dimensions given

PSS/ N 0106: Erection of Power Distribution Lines

	Basic shapes: square, rectangle, triangle, circle, quadrilaterals **Compound shapes:** involving squares, rectangles, triangles, circles, semi-circles, quadrants of a circle **Solid shapes:** cube, rectangular prism, cylinder SA9. use appropriate measuring techniques and units of measurement SA10. use appropriate units and number systems to express degree of accuracy **Units and number systems representing degree of accuracy**: decimals places, significant figures, fractions as a decimal quantity SA11. use metric systems of measurement
	Learning
	The user/individual on the job needs to know and understand how to: SA12. participate in on-the-job and other learning, training and development interventions and assessments SA13. clarify task related information with appropriate personnel or technical adviser SA14. seek to improve and modify own work practices SA15. maintain current knowledge of application standards, legislation, codes of practice and product/process developments
B. Professional Skills	**Problem Solving**
	The user/individual on the job needs to know and understand how to: SB1. identify problems with work planning, procedures, output and behavior and their implications SB2. prioritize and plan for problem solving SB3. communicate problems appropriately to others SB4. identify sources of information and support for problem solving SB5. seek assistance and support from other sources to solve problems SB6. identify effective resolution techniques SB7. select and apply resolution techniques SB8. seek evidence for problem resolution
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB9. plan, prioritize and sequence work operations as per job requirements SB10. organize and analyze information relevant to work SB11. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
	Initiative and Enterprise
	The user/individual on the job needs to know and understand how to: SB12. undertake and express new ideas and initiatives to others SB13. modify work plan to overcome unforeseen difficulties or developments that occur as work progresses SB14. participate in improvement procedures including process, quality and internal/external customer/supplier relationships SB15. one's competencies in new and different situations and contexts to achieve more
	Self-Management

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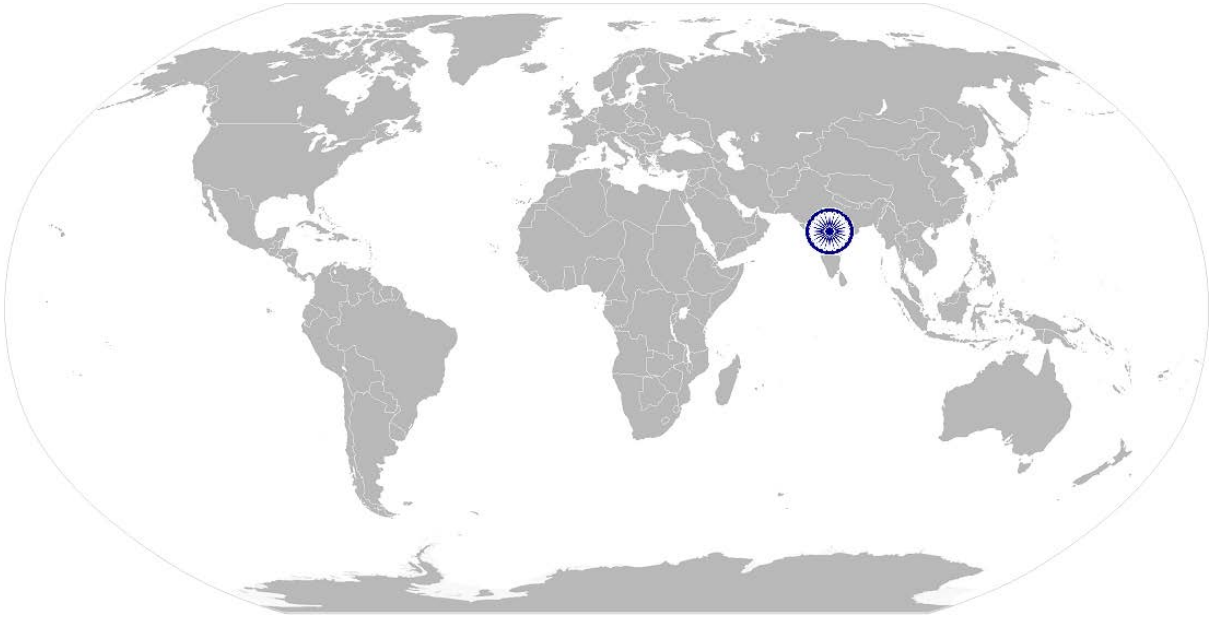
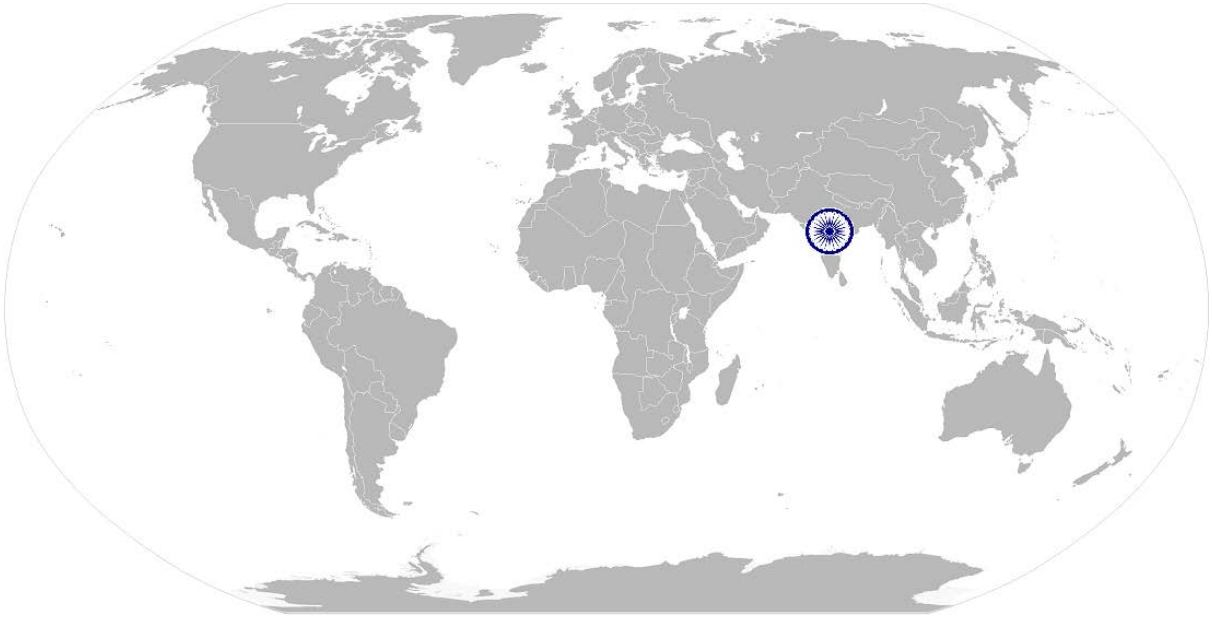
	The user/individual on the job needs to know and understand how to: SB16. exercise restraint while expressing dissent and during conflict situations SB17. avoid and manage distractions to be disciplined at work SB18. manage own time for achieving better results
	Teamwork
	The user/individual on the job needs to know and understand how to: SB19. work in a team in order to achieve better results SB20. identify and clarify work roles within a team SB21. communicate and cooperate with others in the team for better results SB22. seek assistance from fellow team members



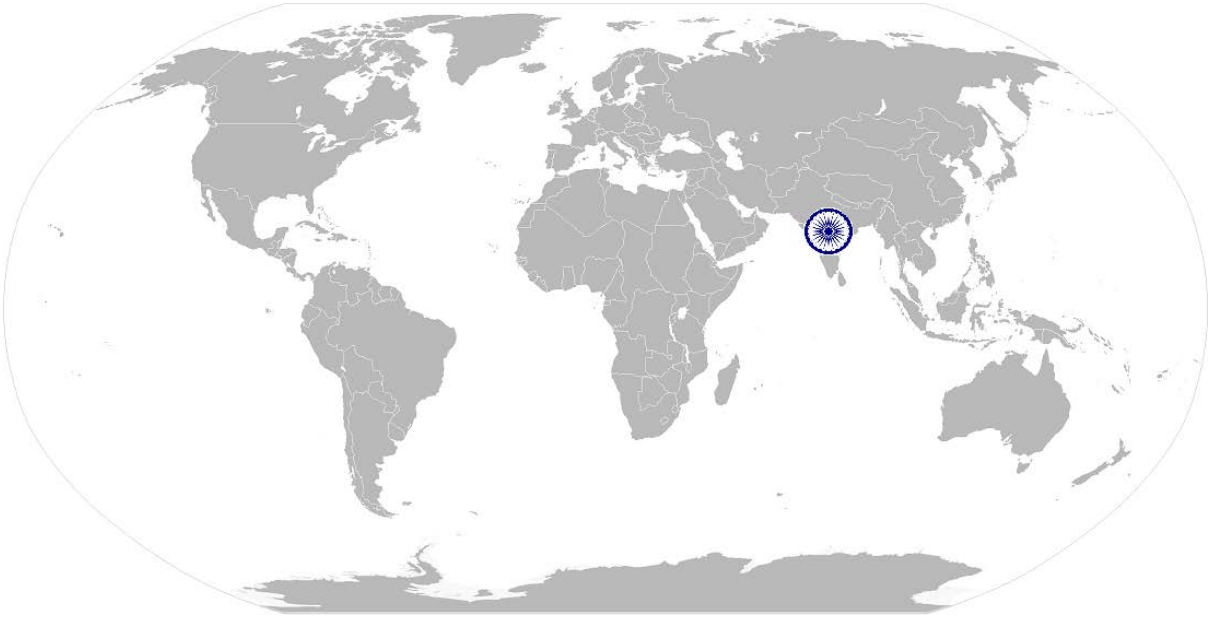
PSS/ N 0106: Erection of Power Distribution Lines

NOS Version Control

NOS Code	PSS/ N 0106		
Credits NSQF	TBD	Version number	1.0
Industry	Power	Drafted on	26/03/15
Industry Sub-sector	Distribution	Last reviewed on	26/03/15
		Next review date	26/03/17



National Occupational Standard



Overview

This unit covers the competencies required for laying down underground and AB cables for Power Distribution, including preparing the cables, trenching, laying, inspection and commissioning of these lines. It also covers the respective health and safety competencies required to perform such operations.

PSS/ N 0108: Laying of underground and AB cables

National Occupational Standard

Unit Code	PSS/ N 0108
Unit Title (Task)	Laying of underground and AB cables
Description	This unit covers the competencies required technicians to lay underground and AB cables for setting up Power Distribution Lines. This includes working with the crew to dig trenches, prepare and lay wiring, handling of tools and equipment for laying and commissioning and carrying out necessary tasks in a safe, efficient and effective manner. The candidate will be expected to perform mostly independently, under little to no supervision.
Scope	This unit/task covers the following: • Working safely • Preparing cables • Laying down cables • Carrying out maintenance

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Working safely	The user / individual on the job should be able to: PC1. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for Electrical and related operations PC3. work following laid down procedures and instructions PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location PC5. ensure work area is clean and safe from hazards before and after the job is completed
Preparing cables and other materials for job	The user / individual on the job should be able to: PC6. identify job requirements for specific operations as per instructions given from valid sources **Valid sources:** job instruction sheet/job card; work drawings; supervisor/incharge PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications PC8. ensure all tools, equipment and material supplies required for the work are acquired and transported safely to the work site PC9. check tools and equipment for calibration and assess suitability for use PC10. check and select the correct types of cables for the job PC11. ensure the cable and joints are suitable and as per job requirement

PSS/ N 0108: Laying of underground and AB cables

Laying and maintenance of cables	The user / individual on the job should be able to: PC12. determine cable installation and laying location(s) as per approved procedures PC13. ensure the trench digging operations have been completed as per requirement and specifications, in a safe and efficient manner PC14. lay down cable as per requirement, including cleaning, lubricating, setting of conduit and pulling cables through conduit safely and without damage PC15. pull cable through conduit using equipment such as tension machines, winches and capstans PC16. ensure cables are set to proper depth, and properly aligned PC17. replace cables where not as per requirement PC18. ensure pit back filling, brick laying and concreting is done as per requirement, as correct procedures PC19. follow applicable construction standards e.g. REC construction standards, for carrying out the laying procedures PC20. perform post-installation procedures for ensuring clean and safe environment in the work and surrounding area
	The user / individual on the job should be able to: PC21. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved PC22. leave the work area in a safe and tidy condition on completion of the laying activities PC23. refer unresolved job related problems to appropriate personnel for support PC24. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. relevant health and safety requirements applicable in the work place KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities KA4. reporting structure, inter-dependent functions, lines and procedures in the work area KA5. how to engage with specialists for support in order to resolve incidents and service requests KA6. importance of working in clean and safe environment practices and procedures KA7. relevant people and their responsibilities within the work area KA8. escalation matrix and procedures for reporting work and employment related issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. types of common cables and their use **Types:** Core (one, three); armored and unarmored; LT & HT; **Use:** e.g. single and three phase systems, etc.

PSS/ N 0108: Laying of underground and AB cables

	KB2. common electric and power terminology used in transmission and distribution KB3. different types of insulation used in cables and their purpose **Types**: e.g. rubber, paper, PVC, XLPE KB4. conductor metal types, composition and shapes **Types:** e.g. copper, aluminium KB5. importance and classification of cable with respect to insulation thickness specific health and safety precautions which must be taken when carrying out cable laying processes and working in confined spaces **Precautions:** e.g. loose dhotis, pajamas, key chain or watch chains should not be worn; shoes with projecting nails or other types of metal parts not to be used; do not start work unless circuit is in off condition, line clear permit is taken on equipment, equipment or line is properly earthed, every electrical line or equipment should be first made off and take line clear permit before taking the work in hand KB6. hazards associated with carrying out cable laying processes and how they can be minimized **Hazards**: live wires and equipment, blockages and obstructions, loose earth, sharp surfaces and edges, insects and reptiles, heavy objects, etc. KB7. importance of following job instructions and defined cable laying procedures KB8. material preparation methods and techniques to be undertaken, prior to laying cables KB9. tools and equipment used in cable laying activities KB10. preparation of cables and equipment for cable laying activities KB11. types of cable joints **Types:** e.g. straight, T-joint, KB12. types of conduit systems and components KB13. adjacent utilities such as gas, water, communication and drainage requirements KB14. pulling methods and calculations KB15. installation specifications such as direct burial and duct system KB16. voltage and amperage KB17. problems that can occur with the cable laying and maintenance operations, and how these can be overcome KB18. procedures for handling components with imperfections/defects that cannot be removed/repaired and how can they be minimized KB19. importance of leaving the work area and equipment in a safe and clean condition on completion of the job activities KB20. importance of reporting problems in a timely manner KB21. calibration schedule of all equipment used in heat treatment procedure KB22. keep records of the job including data logging, chart recording of various activities and data points like tolerance levels, etc. KB23. importance of tools and equipment to be kept in a safe and usable condition KB24. personal protective equipment (PPE) and clothing that must be worn during the cable laying and maintenance activity and from where can it be obtained **PPE:** e.g. safety helmet, safety glove, safety shoe, climbing harness, lanyard and tool belt (when climbing), earth rod (discharge rod), zola, safety rope

PSS/ N 0108: Laying of underground and AB cables

Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Communication**
	The user/ individual on the job needs to know and understand how to: SA1. read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language SA2. fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language SA3. convey and share technical information clearly using appropriate language SA4. check and clarify task-related information SA5. liaise with appropriate authorities using correct protocol SA6. communicate with people in respectful form and manner in line with organizational protocol
	Numerical and computational skills
	The user/individual on the job needs to know and understand how to: SA7. undertake basic numerical computations and calculations **Numerical computations:** addition, subtraction, multiplication, division, fractions and decimals, percentages and proportions, simple ratios and averages SA8. identify various basic, compound and solid shapes as per dimensions given **Basic shapes:** square, rectangle, triangle, circle, quadrilaterals **Compound shapes:** involving squares, rectangles, triangles, circles, semi-circles, quadrants of a circle **Solid shapes:** cube, rectangular prism, cylinder SA9. use appropriate measuring techniques and units of measurement SA10. use appropriate units and number systems to express degree of accuracy **Units and number systems representing degree of accuracy**: decimals places, significant figures, fractions as a decimal quantity SA11. use metric systems of measurement
	Learning
	The user/individual on the job needs to know and understand how to: SA12. participate in on-the-job and other learning, training and development interventions and assessments SA13. clarify task related information with appropriate personnel or technical adviser SA14. seek to improve and modify own work practices SA15. maintain current knowledge of application standards, legislation, codes of practice and product/process developments
B. Professional Skills	**Problem Solving**
	The user/individual on the job needs to know and understand how to: SB1. identify problems with work planning, procedures, output and behavior and their implications SB2. prioritize and plan for problem solving SB3. communicate problems appropriately to others SB4. identify sources of information and support for problem solving SB5. seek assistance and support from other sources to solve problems

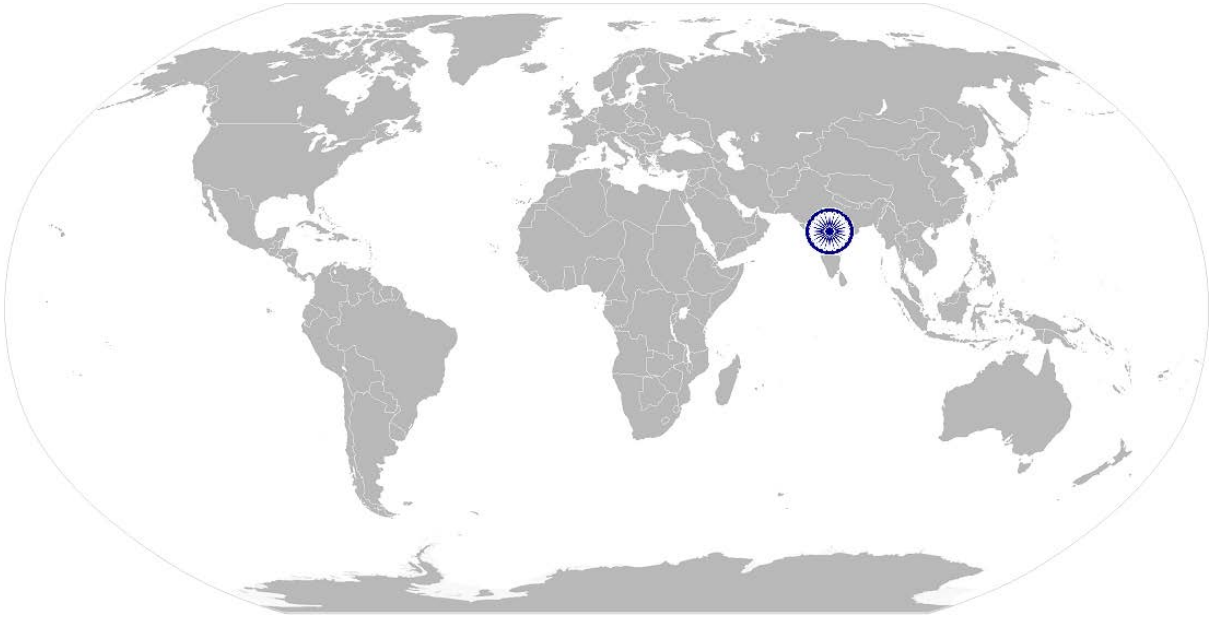
PSS/ N 0108: Laying of underground and AB cables

	SB6. identify effective resolution techniques SB7. select and apply resolution techniques SB8. seek evidence for problem resolution
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB9. plan, prioritize and sequence work operations as per job requirements SB10. organize and analyze information relevant to work SB11. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
	Initiative and Enterprise
	The user/individual on the job needs to know and understand how to: SB12. undertake and express new ideas and initiatives to others SB13. modify work plan to overcome unforeseen difficulties or developments that occur as work progresses SB14. participate in improvement procedures including process, quality and internal/external customer/supplier relationships SB15. one's competencies in new and different situations and contexts to achieve more
	Self-Management
	The user/individual on the job needs to know and understand how to: SB16. exercise restraint while expressing dissent and during conflict situations SB17. avoid and manage distractions to be disciplined at work SB18. manage own time for achieving better results
	Teamwork
	The user/individual on the job needs to know and understand how to: SB19. work in a team in order to achieve better results SB20. identify and clarify work roles within a team SB21. communicate and cooperate with others in the team for better results SB22. seek assistance from fellow team members

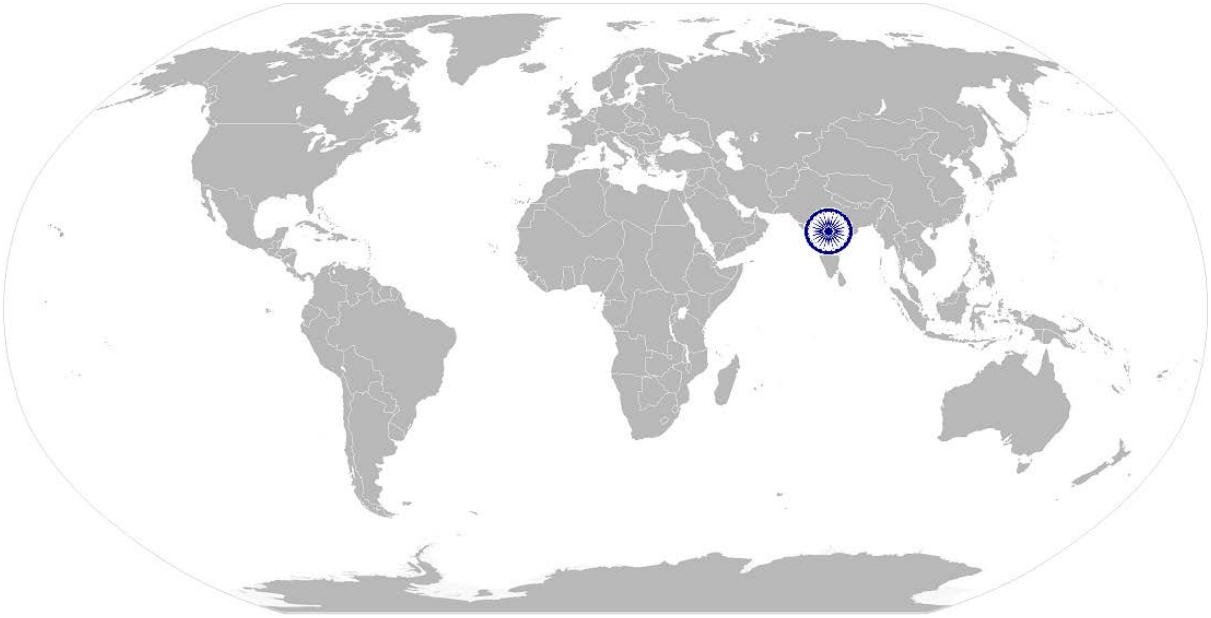
PSS/ N 0108: Laying of underground and AB cables

NOS Version Control

NOS Code	PSS/ N 0108		
Credits NSQF	TBD	Version number	1.0
Industry	Power	Drafted on	26/03/15
Industry Sub-sector	Distribution	Last reviewed on	26/03/15
		Next review date	26/03/17



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 in a power plant, power station/substation or on the field while working on power equipment.

PSS/ N 2001: Use basic health and safety practices for power related work

National Occupational Standard

Unit Code	**PSS / N 2001**
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 in a power plant, power station/substation or on the field while working on power equipment. It covers responsibilities towards self, others, assets and the environment. It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc. It covers knowledge of fire safety, common first aid applications, safe practices and emergency procedures.
Scope	This unit/task covers the following: • 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	The user/individual on the job should be able to: PC1. use protective clothing/equipment for specific tasks and work conditions **Protective clothing**: leather or asbestos gloves, flame proof aprons, flame proof overalls buttoned to neck, cuffless (without folds), trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors **Equipment**: hand and face shields, machine guards, residual current devices, shields, dust sheets, respirator PC2. state the name and location of people responsible for health and safety in the workplace PC3. state the names and location of documents that refer to health and safety in the workplace PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace **Hazards**: electrical hazards (dealing with high voltage equipment, power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.); sharp edged and heavy tools; heated metals; oxyfuel and gas cylinders; welding radiation; hazardous surfaces(sharp, slippery, uneven, chipped, broken, etc.); hazardous substances(chemicals, gas, oxy-fuel, fumes, dust, hazardous waste materials, etc.); physical hazards(working at heights, working in windy

	or moist areas, large and heavy objects and machines, sharp and piercing objects, moving objects and part of machinery, tolls and machines, intense light, load noise, abnormal temperature; obstructions in corridors, by doors, blind turns, over stacked shelves and packages, etc.); working in high temperatures **Possible causes of risk and accident**: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness); not taking safety precautions PC5. follow electrical safe working procedures such as Tag out/Lock out, PTW (Permit To Work), PC6. follow warning signs (danger, out of service, etc.) while working with electrical systems PC7. use standard safe working practices when working at heights, confined areas and trenches PC8. test any electrical equipment and system using insulated testing devices before touching them PC9. ensure positive isolation of electrical equipment & system as per given standards PC10. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed **Parameters**: temperature, pressure, flow& current PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others **Safe working practices**: using protective clothing and equipment; putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; while working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.; safe lifting and carrying practices; use equipment that is working properly and is well maintained; take due measures for safety while working at heights, etc. including safety harness, fall arrestors, guardrails, proper work positioning, do not jump or overload, etc.; take due measures for safety while working in confined spaces or trenches, etc. PC12. state methods of accident prevention in the work environment of the job role **Methods of accident prevention**: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors PC13. state location of general health and safety equipment in the workplace **General health and safety equipment**: fire extinguishers; first aid equipment; safety instruments and clothing; safety installations(e.g.

PSS/ N 2001: Use basic health and safety practices for power related work

	fire exits, exhaust fans) PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladders **Faults**: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc. **Set up**: firm/level base, clip/lash down, leaning at the correct angle, appropriate load as per capacity, etc. PC15. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa PC16. inspect power plant and its equipment routinely for any signs of oil, water and/or steam leakage PC17. store flammable materials and machine lubricating oil safely and correctly PC18. check that the emission and pollution control devices are working properly in line with environmental policy standards PC19. apply good housekeeping practices at all times **Good housekeeping practices**: clean/tidy work areas, removal/disposal of waste products, protect surfaces PC20. identify common hazard signs displayed in various areas **Various areas**: on chemical containers; equipment; packages; inside buildings; in open areas and public spaces, etc. PC21. retrieve and/or point out documents that refer to health and safety in the workplace **Documents**: fire notices, accident reports, safety instructions for equipment and procedures, company notices and documents, legal documents (e.g. government notices) PC22. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly
Fire safety	The user/individual on the job should be able to: PC23. use the various appropriate fire extinguishers on different types of fires correctly **Types of fires**: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids; Class C: e.g. combustible gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class D: combustible chemicals and metals such as magnesium, titanium, and sodium (These fires burn at extremely high temperatures and require special suppression agents) These categories of fires become Class A, B, C and D fires when the electrical equipment that initiated the fire is no longer receiving electricity; Class E: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. PC24. demonstrate rescue techniques applied during fire hazard PC25. demonstrate good housekeeping in order to prevent fire hazards PC26. demonstrate the correct use of a fire extinguisher

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Emergencies, rescue and first-aid procedures	The user/individual on the job should be able to: PC27. demonstrate how to free a person from electrocution PC28. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc. PC29. demonstrate basic techniques of bandaging PC30. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments PC31. perform and organize loss minimization or rescue activity during an accident in real or simulated environments PC32. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases PC33. demonstrate the artificial respiration and the CPR Process PC34. participate in emergency procedures **Emergency procedures**: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work PC35. complete a written accident/incident report or dictate a report to another person, and send report to person responsible **Incident Report includes details of**: name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified PC36. demonstrate correct method to move injured people and others during an emergency
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace. KA2. names and location of documents that refer to health and safety in the workplace.
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. meaning of “hazards” and “risks” KB2. health and safety hazards commonly present in the work environment and related precautions KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible KB4. possible causes of risk and accident **Possible causes of risk and accident**: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness); not taking safety precautions KB5. methods of accident prevention **Methods of accident prevention**: training in health and safety

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	procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors KB6. safe working practices when working with tools and machines KB7. safe working practices while working at various hazardous sites KB8. where to find all the general health and safety equipment in the workplace KB9. various dangers associated with the use of electrical equipment KB10. positive isolation of electrical equipment and system KB11. safe handling and disposal of hazardous power plant wastes KB12. use of emission and pollution control devices and measures taken to control pollution KB13. various safety procedures and equipment used to work at heights, trenches and confined places KB14. safe working practices specific to working with electrical equipment & system e.g. lock out/ tag out, PTW, etc. KB15. preventative and remedial actions to be taken in the case of exposure to toxic materials **Exposure:** ingested, contact with skin, inhaled **Preventative action**: ventilation, masks, protective clothing/ equipment); **Remedial action:** immediate first aid, report to supervisor **Toxic materials:** solvents, flux, lead KB16. importance of using protective clothing/equipment and other insulated work gear while handling electrical system and equipment KB17. precautionary activities taken to prevent fire accident KB18. various causes of fire **Causes of fires**: heating of metal; spontaneous ignition; sparking; electrical heating; loose fires (smoking, welding, etc.); chemical fires; etc. KB19. techniques of using the different fire extinguishers KB20. different methods of extinguishing fire KB21. different materials used for extinguishing fire **Materials**: sand, water, foam, CO2, dry powder KB22. emergency rescue techniques applied during a fire hazard KB23. various types of safety signs and what they mean 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 KB25. content of written accident report KB26. potential injuries and ill health associated with incorrect manual handing KB27. safe lifting, carrying and transporting practices KB28. personal safety, health and dignity issues relating to the movement of a person by others KB29. potential impact to a person who is moved incorrectly
Skills (S) [Optional]	

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A. Core Skills/ Generic Skills	**Reading and Writing Skills**
	The user/individual on the job needs to know and understand how to: SA1. read and comprehend basic content to read labels, charts, signages SA2. read and comprehend basic English to read manuals of operations SA3. read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. question coworkers appropriately in order to clarify instructions and other issues SA5. give clear instructions to coworkers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to: SA6. make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines
B. Professional Skills	**Plan and Organize**
	The user/individual on the job needs to know and understand how to: SB1. plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Working with others
	The user/individual on the job needs to know and understand how to: SB2. remain congenial while discussing and debating issues with co-workers SB3. follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. thank coworkers for any assistance received SB6. offer appropriate respect based on mutuality and respect for fellow worksmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. identify immediate or temporary solutions to resolve delays SB9. identify sources of support that can be availed of for problem solving for various kind of problems SB10. seek appropriate assistance from other sources to resolve problems SB11. report problems that you cannot resolve to appropriate authority
	Analytical Thinking

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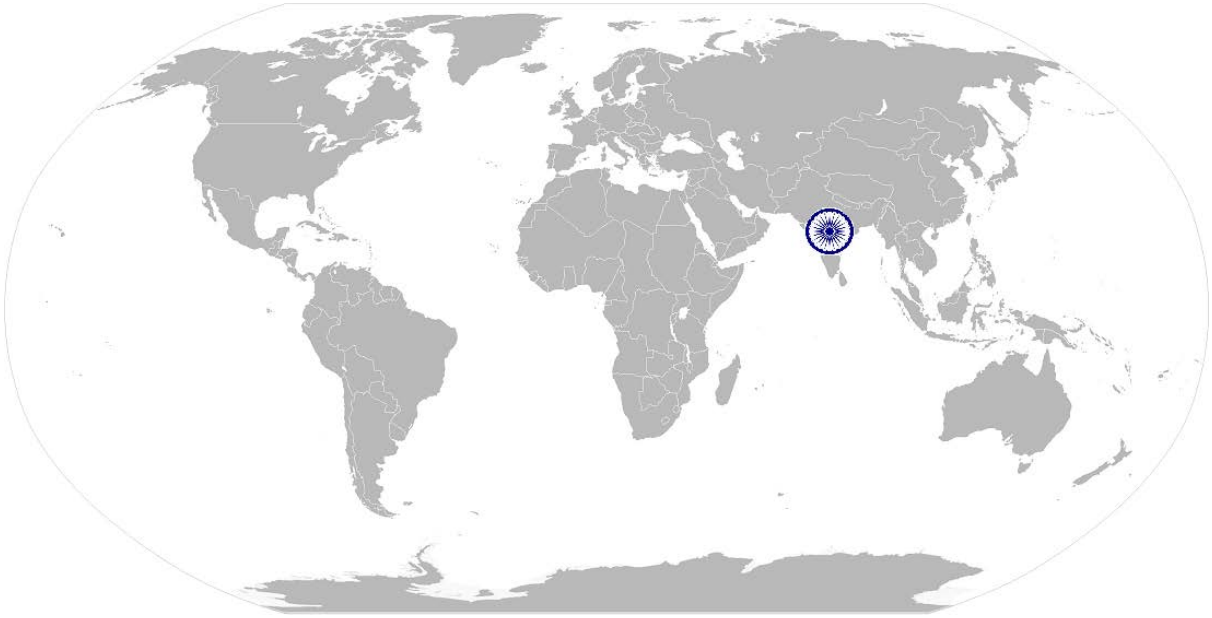
	The user/individual on the job needs to know and understand how to: SB12. identify cause and effect relations in their area of work SB13. use cause and effect relations to anticipate potential problems and their solution

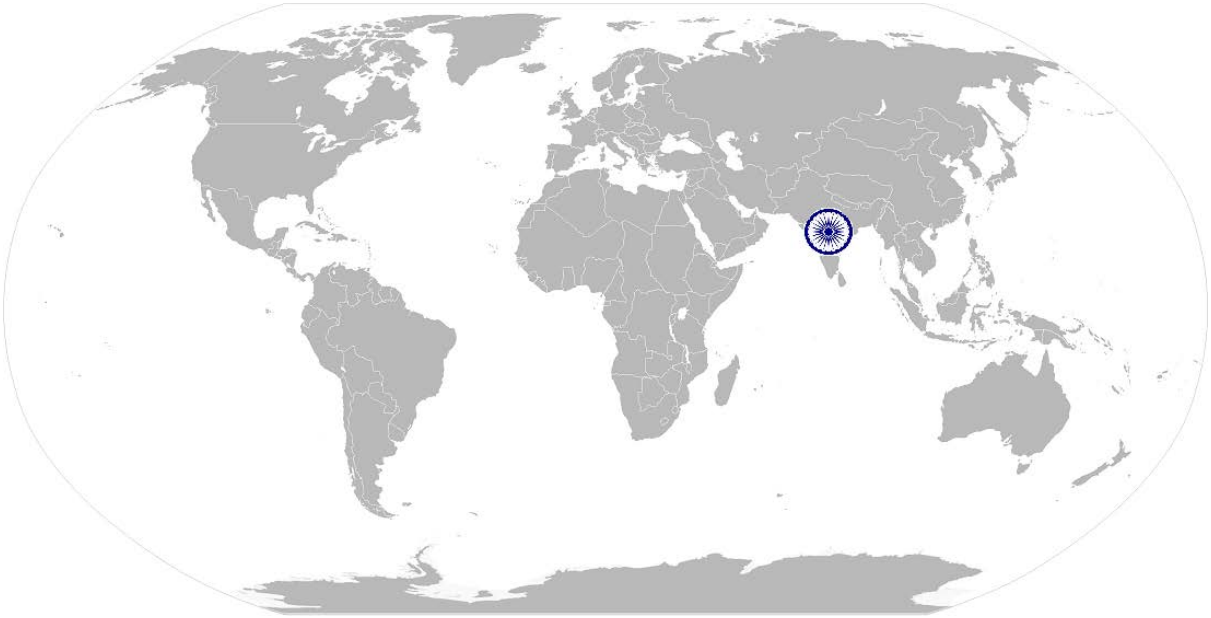


PSS/ N 2001: Use basic health and safety practices for power related work

NOS Version Control

NOS Code	PSS / N 2001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Power	Drafted on	26/03/15
Industry Sub-sector	Generation, Transmission, Distribution, Renewable energy, Equipment manufacturing	Last reviewed on	26/03/15
		Next review date	26/03/17

National Occupational Standard



Overview

This unit covers basic practices that improve effectiveness of working with others in an organizational set-up.

CSC/ N 1336: Work effectively with others

National Occupational Standard

Unit Code	**CSC / N 1336**
Unit Title (Task)	**Work effectively with others**
Description	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. These cover areas such as communication etiquette, discipline, listening, handling conflict and grievances.
Scope	This unit/task covers the following: • Working with others

Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Working with others	The user/individual on the job should be able to: PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt PC3. give information to others clearly, at a pace and in a manner that helps them to understand PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks PC6. display appropriate communication etiquette while working **Communication etiquette:** do not use abusive language; use appropriate titles and terms of respect; do not eat or chew while talking (vice versa)etc. PC7. display active listening skills while interacting with others at work PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism PC9. demonstrate responsible and disciplined behaviors at the workplace **Disciplined behaviors:** e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc. PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. reporting structure, inter-dependent functions, lines and procedures in the work area KA3. relevant people and their responsibilities within the work area KA4. escalation matrix and procedures for reporting work and employment related issues

CSC/ N 1336: Work effectively with others

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. various categories of people that one is required to communicate and co-ordinate with in the organization KB2. importance of effective communication in the workplace KB3. importance of teamwork in organizational and individual success KB4. various components of effective communication KB5. key elements of active listening KB6. value and importance of active listening and assertive communication KB7. barriers to effective communication KB8. importance of tone and pitch in effective communication KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer KB11. importance of ethics for professional success KB12. importance of discipline for professional success KB13. what constitutes disciplined behavior for a working professional KB14. common reasons for interpersonal conflict KB15. importance of developing effective working relationships for professional success KB16. expressing and addressing grievances appropriately and effectively KB17. importance and ways of managing interpersonal conflict effectively
Skills (S) [Optional]	

CSC/ N 1336: Work effectively with others

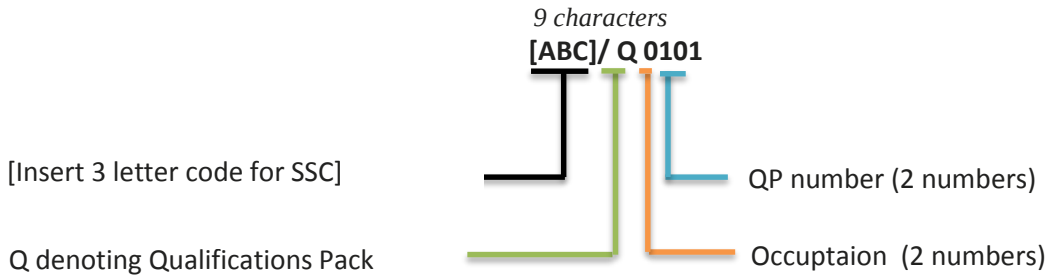
NOS Version Control

NOS Code	CSC / N 1336		
Credits(NSQF)	TBD	Version number	1.0
Industry	Power Sector	Drafted on	26/03/15
Industry Sub-sector	Generation, Transmission, Distribution, Renewable Energy, Power Equipment Manufacturing	Last reviewed on	26/03/15
		Next review date	26/03/17

Annexure

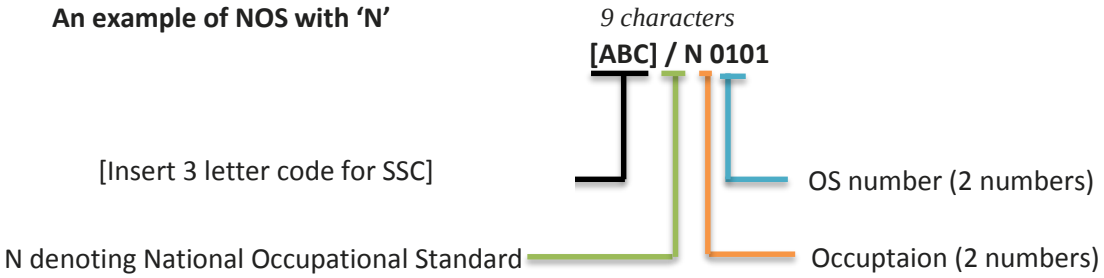
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Generation	01-10
Transmission	01-10
Distribution	01-10
Renewable Energy	01-10
Power Equipment Manufacturing	01-10

Sequence	Description	Example
Three letters	Power	PSS
Slash	/	/
Next letter	Whether **Q**P or **N**OS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Lineman Construction

Qualification Pack PSS/ Q 0108

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

				Mark Allocation	
		Total Mark (400)	**Out of**	**Theory**	**Skills Practical**
PSS/ N 0106: Erection of Power Distribution Lines	PC1. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines	**100**	3	1	2
	PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for electrical and related operations		3	1	2
	PC3. work following laid down procedures and instructions		2	1	1
	PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location		1	0	1
	PC5. ensure work area is clean and safe from hazards before and after the job is completed		1	0	1

	PC6. identify job requirements for specific operations as per instructions given from valid sources		2	1	1
	PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications		2	1	1
	PC8. ensure equipment and tools required for Distribution installation work are identified, acquired, calibrated, suitable and approved for use		2	1	1
	PC9. identify, estimate and acquire correct materials required for the installation work		2	0	2
	PC10. ensure loading and unloading operations for pole parts in a safe and efficient manner		2	1	1
	PC11. identify circuit for lock-out and tagging, and recognize other equipment or abnormal conditions that may present a hazard		3	1	2
	PC12. eliminate hazards by using methods such as de-energizing, grounding and removing backfeed potential		3	1	2
	PC13. determine pole location(s) as per approved procedures		3	1	2
	PC14. ensure excavation operations are carried out with the help of ground crew for pole setting template, as per requirement and specifications, in a safe and efficient manner		2	1	1
	PC15. perform pole erection procedures as per requirements and specifications, in a safe and efficient manner		4	1	3
	PC16. install grounding for pole installation where required and cross arm fixing to the pole before erection		3	1	2
	PC17. ensure poles set to proper depth, and properly aligned		2	1	1
	PC18. install pole guys and anchors as required, as per standard procedure		3	1	2

	PC19. ensure pit filling and concreting is done as per requirement, as correct procedures		2	1	1
	PC20. follow applicable construction standards e.g. REC construction standards, for carrying out the erection procedures		4	1	3
	PC21. perform stay wire assembly as per requirements and specifications, safely and efficiently		4	1	3
	PC22. perform pole dismantling procedure where required		2	0	2
	PC23. install travelers on poles or insulators		2	0	2
	PC24. temporarily run conductor/rope through travelers to reduce friction when sagging		3	0	3
	PC25. attach pulling equipment to conductor/rope		2	0	2
	PC26. set up and operate stringing equipment when using tension stringing method		3	1	2
	PC27. carry out conductor stringing procedures, paving conductor on the ground along the pole taking into account permissible span length and sagging		4	1	3
	PC28. transfer conductor from travelers to insulators		2	0	2
	PC29. install dampers, spacers, aerial markers and armour rods according to company standards		3	1	2
	PC30. secure conductor using clamps or ties		2	0	2
	PC31. perform post-installation procedures for ensuring clean and safe environment in the work and surrounding area		3	1	2
	PC32. thoroughly check the line for clearances		2	0	2
	PC33. check guarding and stays for correctness and suitability		2	0	2
	PC34. install warning devices and signages		2	0	2
	PC35. inspect the pole and related components to check if it is as per		3	1	2

	specification and without defects				
	PC36. clear the pole for commissioning as per standard procedure		3	1	2
	PC37. remove the waste components safely and correctly		2	0	2
	PC38. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved		2	0	2
	PC39. shut down and store equipment to a safe condition on completion of the activities		2	0	2
	PC40. leave the work area in a safe and tidy condition on completion of the erection activities		1	0	1
	PC41. refer unresolved job related problems to appropriate personnel for support		1	0	1
	PC42. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem		1	0	1
		Total	**100**	**24**	**76**
PSS/ N 0108: Laying of underground and AB cables	PC1. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines	**100**	5	1	4
	PC2. adhere to procedures or systems in place for health and safety, personal protective equipment (PPE) and other relevant safety regulations for Electrical and related operations		5	1	4
	PC3. work following laid down procedures and instructions		4	1	3
	PC4. ensure that all tools, equipment, power cables are in a safe and usable condition and are kept at secured location		3	0	3
	PC5. ensure work area is clean and safe from hazards before and after the job is completed		3	0	3
	PC6. identify job requirements for specific operations as per instructions		4	1	3

	given from valid sources				
	PC7. brief team members as per requirement, agree and clarify role and job requirements and specifications		4	1	3
	PC8. ensure all tools, equipment and material supplies required for the work are acquired and transported safely to the work site		3	0	3
	PC9. check tools and equipment for calibration and assess suitability for use		3	0	3
	PC10. check and select the correct types of cables for the job		4	1	3
	PC11. ensure the cable and joints are suitable and as per job requirement		4	1	3
	PC12. determine cable installation and laying location(s) as per approved procedures		7	2	5
	PC13. ensure the trench digging operations have been completed as per requirement and specifications, in a safe and efficient manner		5	2	3
	PC14. lay down cable as per requirement, including cleaning, lubricating, setting of conduit and pulling cables through conduit safely and without damage		7	2	5
	PC15. pull cable through conduit using equipment such as tension machines, winches and capstans		4	1	3
	PC16. ensure cables are set to proper depth, and properly aligned		4	1	3
	PC17. replace cables where not as per requirement		5	2	3
	PC18. ensure pit back filling, brick laying and concreting is done as per requirement, as correct procedures		5	2	3
	PC19. follow applicable construction standards e.g. REC construction standards, for carrying out the laying procedures		5	2	3
	PC20. perform post-installation procedures for ensuring clean and		4	1	3

	safe environment in the work and surrounding area				
	PC21. deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved		3	0	3
	PC22. leave the work area in a safe and tidy condition on completion of the laying activities		3	0	3
	PC23. refer unresolved job related problems to appropriate personnel for support		3	0	3
	PC24. monitor the problem and keep the supervisor informed about progress or any delays in resolving the problem		3	0	3
		Total	**100**	**22**	**78**
PSS/ N 2001 (Use basic health and safety practices at the workplace)	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, PTW (Permit To Work),		3	1	2
	PC6. follow warning signs (danger, out of service, etc.) while working with electrical systems		3	1	2
	PC7. use standard safe working practices when working at heights, confined areas and trenches		3	1	2
	PC8. test any electrical equipment and system using insulated testing devices before touching them		3	1	2
	PC9. ensure positive isolation of electrical equipment & system as per given standards		3	1	2

	PC10. recognize any abnormalities in electrical equipment or system installed alarm annunciation and/or noticing parameters from gauge/ indicator installed		3	1	2
	PC11. carry out safe working practices while dealing with hazards to ensure the safety of self and others		3	1	2
	PC12. state methods of accident prevention in the work environment of the job role		2	0	2
	PC13. state location of general health and safety equipment in the workplace		2	0	2
	PC14. inspect for faults, set up and safely use of scaffolds and elevated platforms and ladders		2	0	2
	PC15. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa		3	1	2
	PC16. inspect power plant and its equipment routinely for any signs of oil, water and/or steam leakage		3	0	3
	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		5	2	3
	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		4	1	3

	PC25. demonstrate good housekeeping in order to prevent fire hazards		3	1	2
	PC26. demonstrate the correct use of a fire extinguisher		3	1	2
	PC27. demonstrate how to free a person from electrocution		3	1	2
	PC28. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		3	0	3
	PC29. demonstrate basic techniques of bandaging		3	1	2
	PC30. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC31. perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC32. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	1	2
	PC33. demonstrate the artificial respiration and the CPR Process		3	1	2
	PC34. participate in emergency procedures		3	1	2
	PC35. complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC36. demonstrate correct method to move injured people and others during an emergency		3	1	2
		Total	**100**	**24**	**76**
CSC/ N 1336 (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 behavior 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 behaviors 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
		Total	**100**	**30**	**70**