QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GREEN JOBS

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What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Contact Us:

Skill Council for Green Jobs,
CBIP Building, Malcha Marg, Chanakyapuri
New Delhi – 110021
Ph. 011- 41792866

E-mail:
info@sscgj.in

Introduction

Qualifications Pack- Solar PV Maintenance Technician - Electrical (Ground Mount)

SECTOR: GREEN JOBS

SUB-SECTOR: RENEWABLE ENERGY

OCCUPATION: OPERATION & MAINTENANCE

REFERENCE ID: SGJ/Q0115

ALIGNED TO: NCO-2015/2141.02

Brief Job Description: Solar PV Maintenance Technician – Electrical (Ground Mount) periodically checks and maintains all the electrical components of the solar PV power plant for proper electrical connectivity, incorporating quality craftsmanship and complying with all applicable codes, standards, and safety requirements.

Personal Attributes: This job requires the individual to concentrate on the job at hand and complete it without any accidents so diligence and hardworking are desired attributes for individuals performing this role. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers, and must be good with following instructions of the supervisor.

Job Details

Qualifications Pack Code	**SGJ/Q0115**		
Job Role	**Solar PV Maintenance Technician – Electrical (Ground Mount)** [This job role is applicable in both national and international scenarios]		
Credits (NSQF)	**TBD**	**Version number**	**1.0**
Sector	**Green Jobs**	**Drafted on**	**01/09/2016**
Sub-sector	**Renewable Energy**	**Last reviewed on**	**14/06/2017**
Occupation	**Operation & Maintenance**	**Next review date**	**30/09/2019**
NSQC Clearance on	**03/08/2018**		

Job Role	**Solar PV Maintenance Technician –Electrical (Ground Mount)**
Role Description	Solar PV Maintenance Technician- Electrical (Ground Mount) specializes in maintenance of the electrical parts of the solar PV power plant
NSQF level	4
Minimum Educational Qualifications **Maximum Educational Qualifications**	ITI - Electrical and Electronics Not Applicable
Prerequisite License or Training	N/A
Minimum Job Entry Age	18 years
Experience	Not required
Applicable National Occupational Standards (NOS)	**Compulsory:** 1. SGJ/ N0137 Carry out electrical maintenance of the ground mount solar PV power plant 2. SGJ/ N0121 Maintain personal health & safety at solar PV power plant 3. SGJ/ N0120 Work effectively with others
Performance Criteria	As described in the relevant OS units

Definitions

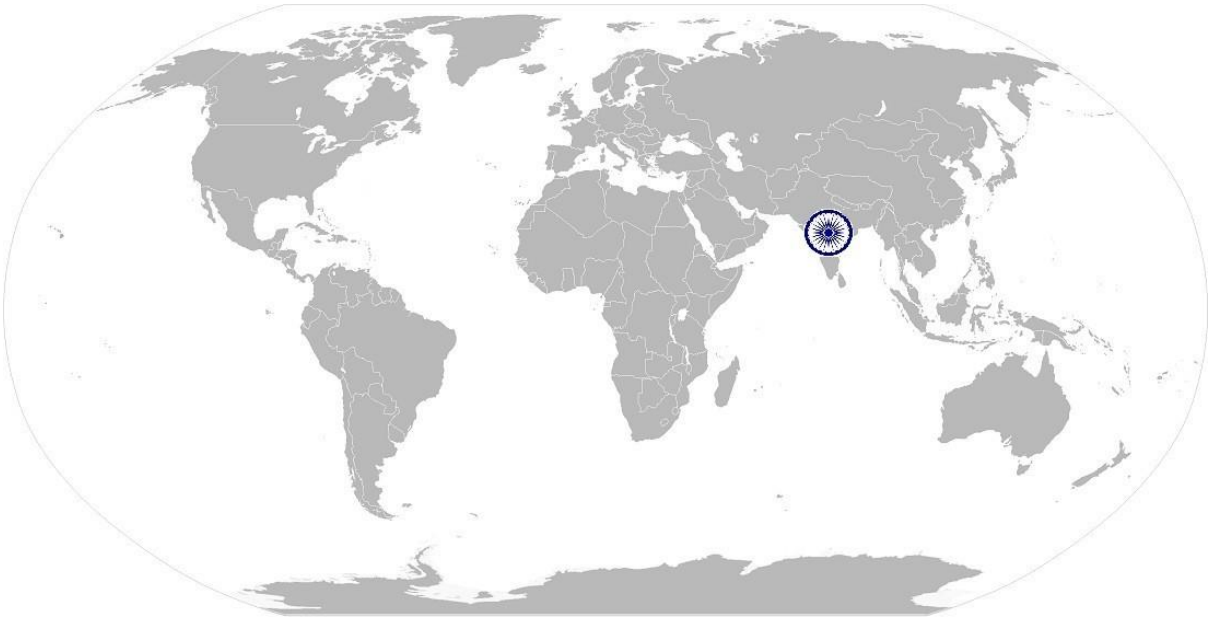
Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OSs, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a 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 quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual need to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.

Core Skills/ Generic Skills	Core skills or generic skills are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms

Keywords /Terms	Description
SCGJ	Skill Council for green jobs
NOS	National Occupational Standards
NSQF	National Skills Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standards
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skills Council
DC	Direct Current
AC	Alternating Current
PV	Photovoltaic
O&M	Operation and Maintenance
ERP	Enterprise Resource Planning
OHS	Occupational Health and Safety

National Occupational Standard



Overview

This unit is about carrying out electrical maintenance of the ground mount solar PV power plant

SGJ/N0137 Carry out electrical maintenance of the ground mount solar PV power plant

National Occupational Standard

Unit Code	SGJ/N0137
Unit Title (Task)	**Carry out electrical maintenance of the ground mount solar PV power plant**
Description	This unit is about electrical maintenance of Solar PV Power Plant
Scope	This unit/task covers the following: • maintenance and troubleshooting of DC connections including cables and junction boxes • maintenance and troubleshooting of earthing and lightening protection systems • maintenance and troubleshooting of module • maintenance and troubleshooting of inverter and monitoring system • completing the work
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Maintenance and troubleshooting of DC connections including cables and junction boxes	To be competent, the user/ individual must be able to: PC1. verify the connections, cables and junction boxes as per the design/ working drawings PC2. measure the string current and verify the connections between modules in each string periodically, if no monitoring of the strings at junction box/combiner box level has been designed PC3. check the integrity and working condition of all connections, fuses and circuit breakers within junction boxes/combiner boxes PC4. check the continuity of cables and wires to ensure proper electrical connections throughout the solar PV power plant up to the inverter input PC5. troubleshoot the identified faults and escalate the issue to superiors if faults cannot be identified or rectified
Maintenance and troubleshooting of earthing and lightening protection systems	To be competent, the user/ individual must be able to: PC6. verify the earthing and lightening protection systems as per the as-built drawings and report in case of any discrepancies PC7. measure the resistance of earthing systems and identify the earth pits where the resistance exceeds design norms PC8. check the continuity of the earthing system PC9. troubleshoot the identified issues and escalate the issue to superiors if faults cannot be rectified
Maintenance and troubleshooting of module	To be competent, the user/ individual must be able to: PC10. ensure proper cleaning of modules as per schedule and standard procedure and remove any shadowing objects PC11. check the module frame for any de-formation or defect PC12. check the integrity of module terminal box and interconnections PC13. check and record any defects in the modules to report it to the supervisor
Maintenance and troubleshooting of inverter and monitoring system	To be competent, the user/ individual must be able to: PC14. measure and record the readings from the inverter and the monitoring system PC15. clean /replace inverter cooling fan filters, removal of dust from electronic components and any other maintenance activity recommended by the manufacturer PC16. inform the supervisor or the appropriate supplier if there is any abnormal functioning of the inverter or the monitoring system

SGJ/N0137 Carry out electrical maintenance of the ground mount solar PV power plant

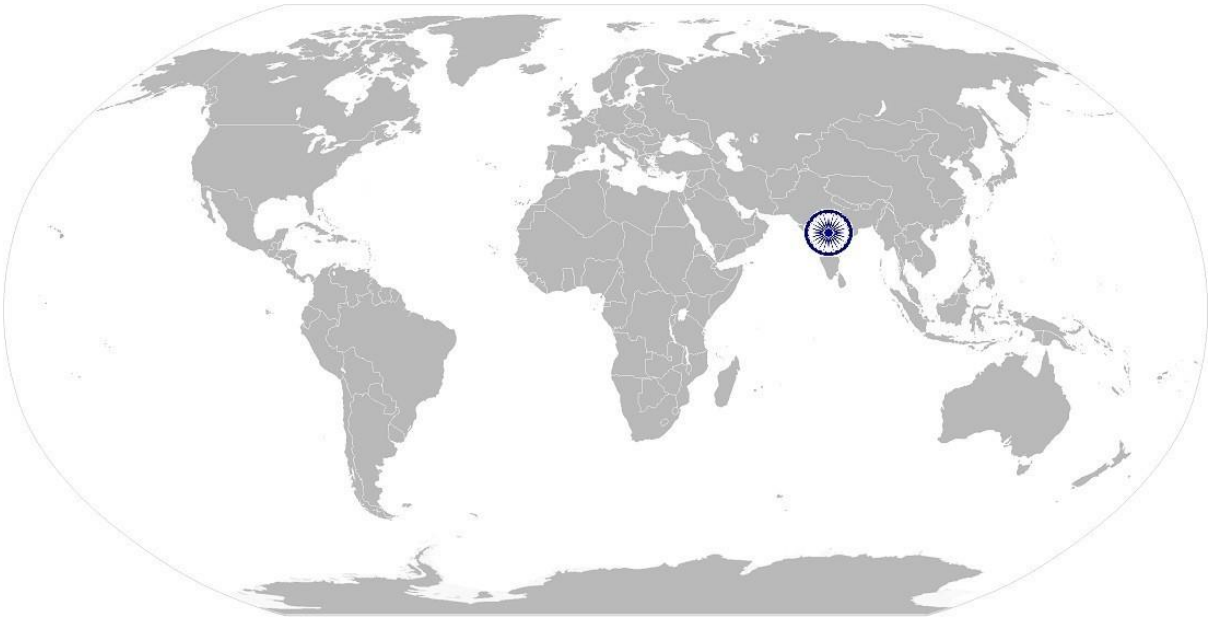
Completing the work	To be competent, the user/ individual must be able to: PC17. clean the work area after completing the maintenance activity PC18. remove all the tools, consumables used from the work area PC19. complete the documentation and get the signature of the superior/ client
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the organization and its processes)	The user/individual on the job needs to know and understand: KA1. government/corporate policies and guidelines on: workplace safety, identification and mitigation of safety hazards, work procedures and guidelines for working at height KA2. document information using appropriate corporate forms KA3. obtain authorization from specified field safety officer and supervisor KA4. legislative, organization, site requirements and procedures
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basics of electrical concepts like voltage, current, power, energy, etc. KB2. basics of electrical measurement equipments KB3. typical specifications, functioning, operating principle, Maintenance requirements, handling procedures and warranties of different types of solar PV plant components like PV modules, inverters, cables, junction boxes, monitoring system and other components KB4. working/as built electrical drawings on site KB5. read and interpret the maintenance schedule for the Solar PV Power Plant KB6. maintenance and proper functioning of earthing and lighting protection systems KB7. complete knowhow on manufacturer's warranty policy KB8. various types of faults that can occur in any component of the Solar PV power plant and their corrective measures KB9. step by step procedure for identification and rectification of various faults KB10. various types of tools, measuring equipments and procedures involved in maintenance and troubleshooting of electrical components of the Solar PV power plant KB11. relevant occupational health and safety standards and waste management procedures KB12. importance of wearing protective clothing and other safety gear while carrying out maintenance activities (PPEs) KB13. waste disposal procedures
Skills (S)	
A. Core Skills/ Generic Skills	**Writing skills**
	The user/ individual on the job needs to know and understand: SA1. proper documentation as per relevant industry standards
	Reading skills
	The user/ individual on the job needs to know and understand: SA2. Vernacular/English language SA3. how to read manuals, health and safety instructions, memos, other company documents SA4. how to read from different sources- books, screens in machines and signage SA5. the various colour codes, as per standard electrical, mechanical and civil nomenclature

SGJ/N0137 Carry out electrical maintenance of the ground mount solar PV power plant

	Oral communication (listening and speaking skills)
	The user/ individual on the job needs to know and understand: SA6. express statements or information clearly so that others can hear and understand SA7. participate in and understand the main points of simple discussions SA8. respond appropriately to any queries SA9. communicate with peers, superiors and sub-ordinates
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. follow organization rule-based decision making process SB2. take decision with systematic course of actions and/or response
	Plan and Organize
	The user/individual on the job needs to know and understand: SB3. plan and organize service work to meet deadlines SB4. plan to utilize time and equipment's effectively SB5. work constructively and collaboratively with others
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB6. follow organisation code of conduct SB7. manage relationships with customers with intent on satisfying its requirements for service delivery
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB8. recognize problems and search for solutions SB9. choose best methods to complete assigned tasks SB10. approach relevant authority when required
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB11. apply domain knowledge, observations and data to select course of action to perform tasks related to solar photovoltaic power plant
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB12. use reasoning skills to identify and resolve basic problems SB13. use intuition to detect any potential problems which could arise during operations SB14. use acquired knowledge of the process for identifying and handling issues

NOS Version Control

NOS Code	SGJ/ N0137		
Credits (NSQF)	TBD	Version number	1.0
Industry	Green Jobs	Drafted on	01/09/2016
Industry Sub-sector	Renewable energy	Last reviewed on	14/06/2017
Occupation	Operation & Maintenance	Next review date	30/09/2019



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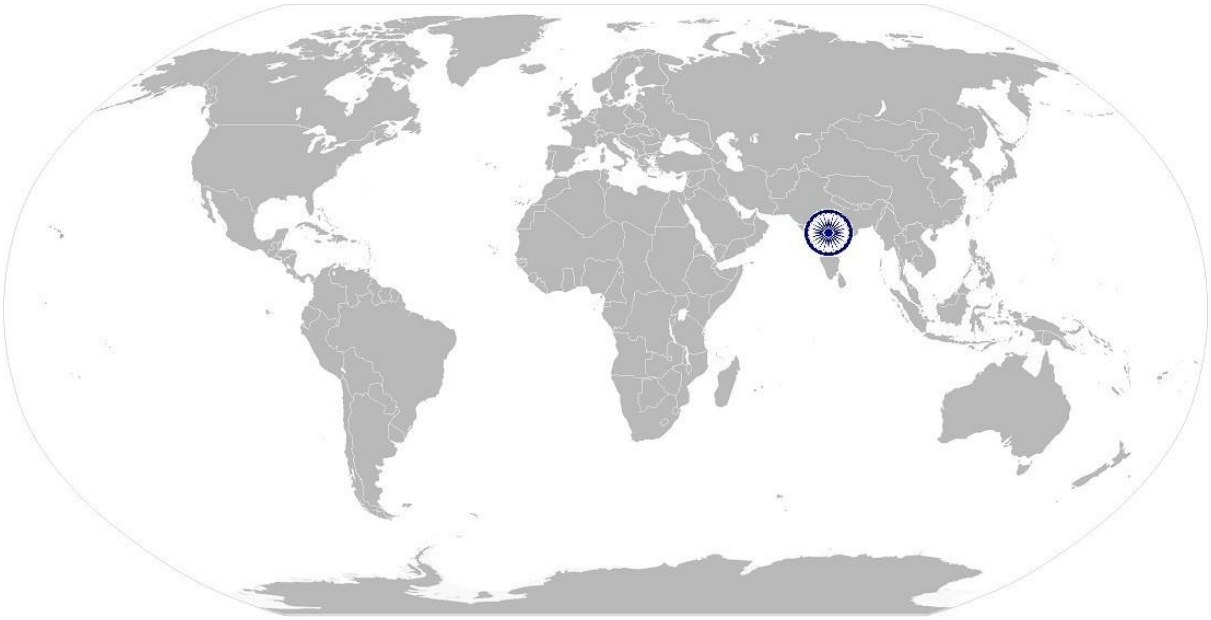
National Occupational Standard



Overview

This unit is about maintaining health & safety at solar PV power plant

SGJ/N0121 Maintain personal health & safety at solar PV power plant

National Occupational Standard

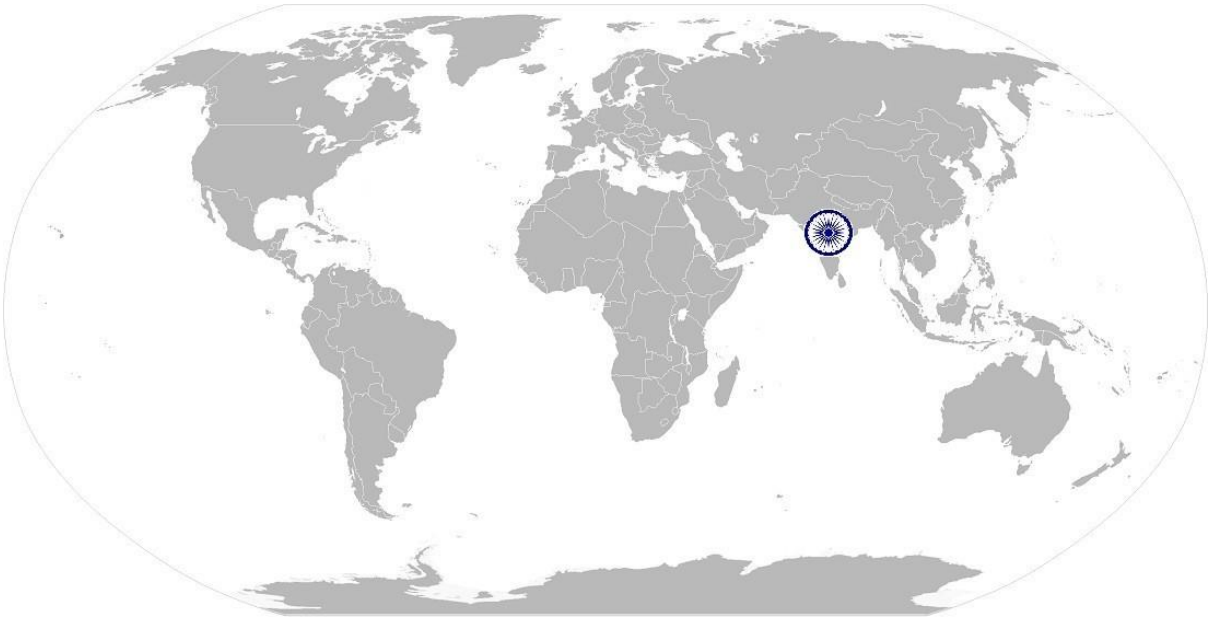
Unit Code	SGJ/N0121
Unit Title (Task)	**Maintain personal health & safety at solar PV power plant**
Description	This unit is about maintaining health & safety at solar PV power plant
Scope	This unit/task covers the following: • establish and follow safe work procedure • use and maintain personal protective equipment • identify and mitigate safety hazards • demonstrate safe and proper use of required tools and equipment
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Establish and Follow safe work procedure	To be competent, the user/individual on the job must be able to: PC1. identify corporate policies required for workplace safety PC2. identify requirements for safe work area and create a safe work environment PC3. identify contact person when workplace safety policies are violated PC4. provide information about incident/violation PC5. identify the location of first aid materials and administer first aid
Use and maintain personal protective equipment	To be competent, the user/individual on the job must be able to: PC6. identify the personal protection equipment required for specific locations on-site PC7. identify expiry dates and wear & tear issues of specified equipment PC8. demonstrate safe and accepted practices for personal protection
Identify and mitigate safety hazards	To be competent, the user/individual on the job must be able to: PC9. identify environmental hazards associated with the project site PC10. identify electrical hazards PC11. identify personal safety hazards or work site hazards and mitigate hazards
Demonstrate safe and proper use of required tools and equipment	To be competent, the user/individual on the job must be able to: PC12. select tools, equipment and testing devices needed to carry out the work PC13. demonstrate safe and proper use of required tools and equipment
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the organization and its processes)	The user/individual on the job needs to know and understand: KA1. company's installation policy KA2. company's customer support policy KA3. company's documentation policy KA4. document information using appropriate corporate forms KA5. obtain authorization from specified field safety officer and supervisor KA6. company's reporting structure & organization culture KA7. company's different department and concerned authority
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. relevant personal protective equipment's required for installation, operation and maintenance of solar PV power plant KB2. knowhow of tools & tackles required to carry out the work KB3. relevant standards and regulations for installation, operation and maintenance of solar photovoltaic power plant in India KB4. occupational health and safety (OHS) standards for installation, operation and maintenance of solar photovoltaic power plant

SGJ/N0121 Maintain personal health & safety at solar PV power plant

	KB5. risk identification and mitigation procedure for safe installation, operation and maintenance of solar photovoltaic power plant
Skills (S)	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. fill up documentation applicable to one's role
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. read vernacular/English language SA3. read and understand manuals, health and safety instructions, memos, other company documents SA4. ability to read from different sources- books, screens in machines and signage SA5. understand the various colour codes, as per standard electrical, mechanical and civil nomenclature
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. express statements or information clearly so that others can hear and understand SA7. participate in and understand the main points of simple discussions SA8. respond appropriately to any queries SA9. communicate with peers, supervisor and sub-ordinates
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. follow organization rule-based decision making process SB2. take decision with systematic course of actions and/or response
	Plan and Organize
	The user/individual on the job needs to know and understand: SB3. plan and organize service work to meet deadlines SB4. plan to utilize time and equipment's effectively SB5. work constructively and collaboratively with others
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB6. follow organisation code of conduct SB7. manage relationships with customers with intent on satisfying its requirements for service delivery
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB8. recognize problems and search for solutions SB9. choose best methods to complete assigned tasks SB10. approach relevant authority when required
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB11. apply domain knowledge, observations and data to select course of action to perform tasks related to solar photovoltaic power plant

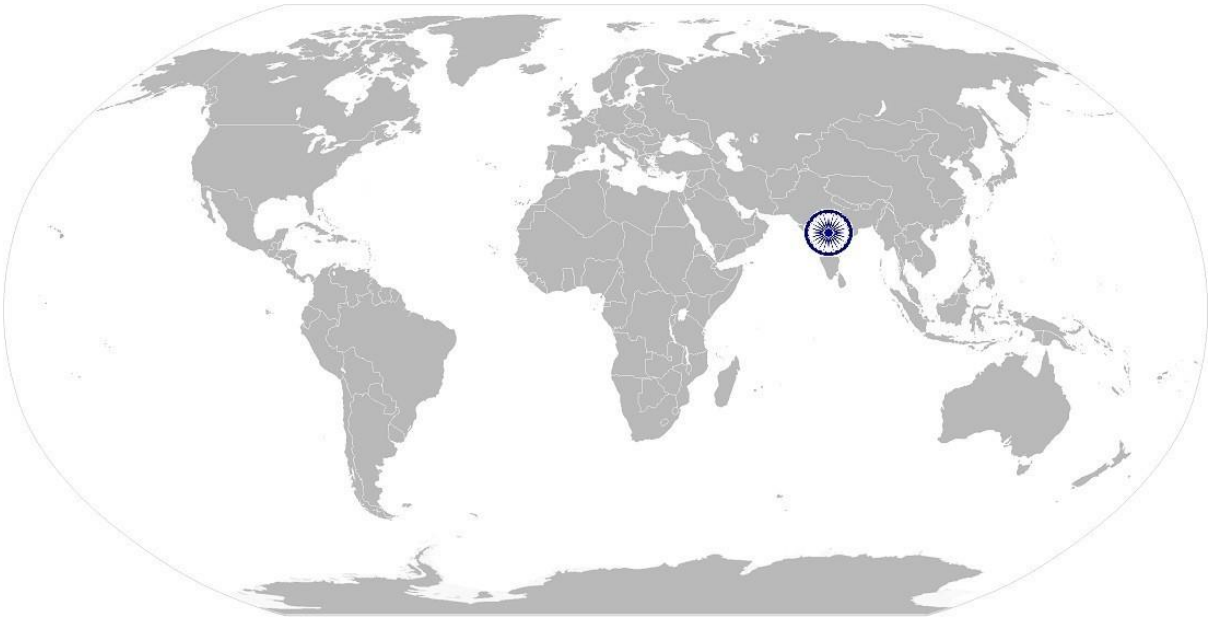
SGJ/N0121 Maintain personal health & safety at solar PV power plant

	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB12. critically evaluate information obtained from customers, supervisor and co-workers to perform day to day activities SB13. ask questions for better understanding



NOS Version Control

NOS Code	SGJ/N0121		
Credits (NSQF)	TBD	Version number	1.0
Industry	Green Jobs	Drafted on	01/09/2016
Industry Sub-sector	Renewable Energy	Last reviewed on	14/06/2017
Occupation	Health and Safety	Next review date	30/09/2019



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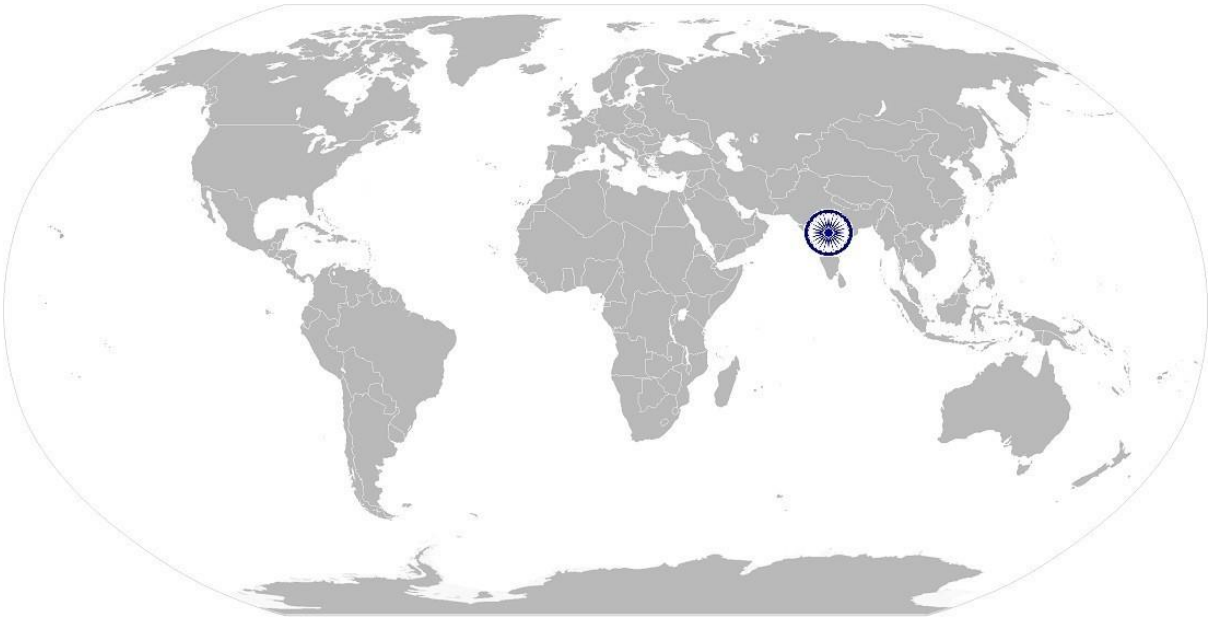
National Occupational Standard



Overview

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

National Occupational Standard

Unit Code	SGJ/N0120
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
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 pass on information to the authorized persons who require it and within agreed timescale and confirm its receipt PC2. assist others in performing tasks in a positive manner where required and possible PC3. consult and assist others to maximize effectiveness and efficiency in carrying out tasks PC4. display appropriate communication etiquette while working PC5. display active listening skills while interacting with others at work PC6. demonstrate responsible and disciplined behaviors at the workplace PC7. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict PC8. identify the need for common grounds with clients, team members, etc. and negotiate in an effective manner to achieve the same PC9. consider and respect the opinions, creativity, values, beliefs and perspectives of others PC10. ensure collaboration and group participation to achieve common goals PC11. promote a friendly, co-operative environment that is conducive to employee's sense of belonging PC12. facilitate an understanding and appreciation of the differences among team members
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 organization 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

SGJ/ N0120 **Work effectively with others**

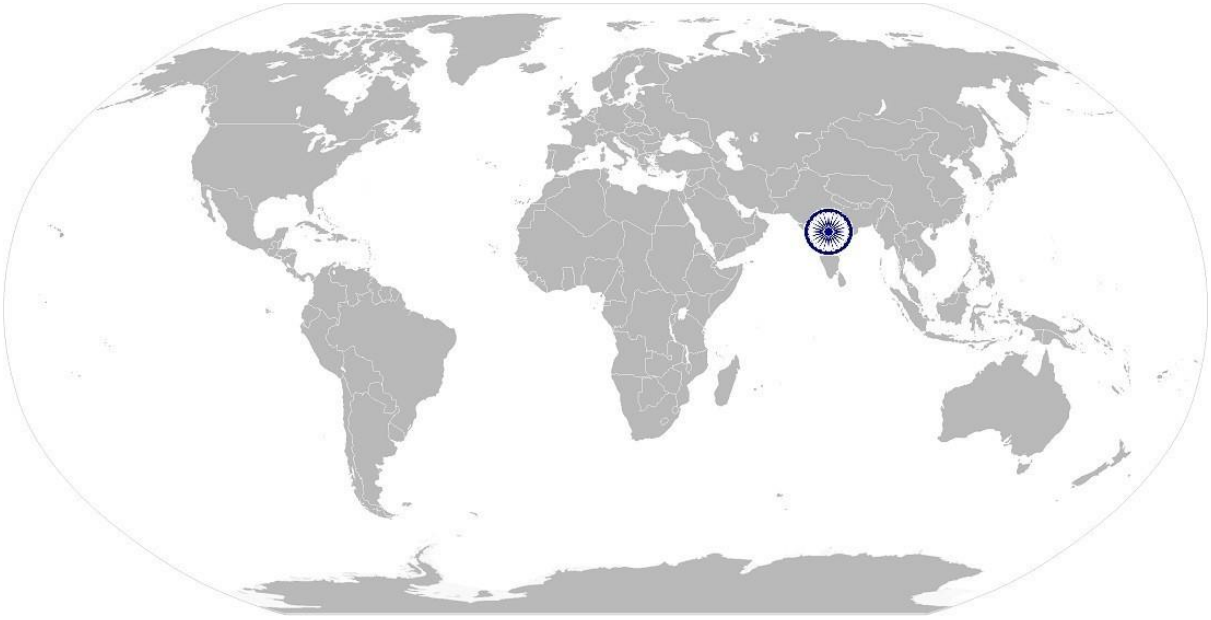
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. various categories of people that one is required to communicate and co-ordinate with in the organization KB2. importance of effective communication in the workplace KB3. importance of teamwork in organizational 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. key elements and importance of non-verbal communication KB12. importance of ethics for professional success KB13. importance of discipline for professional success KB14. what constitutes disciplined behavior for a working professional KB15. common reasons for interpersonal conflict KB16. importance of developing effective working relationships for professional success KB17. expressing and addressing grievances appropriately and effectively KB18. importance and ways of managing interpersonal conflict effectively KB19. importance of teamwork and collaboration
Skills (S)	
A. Core Skills/ Generic Skills	**Writing Skills** The user/ individual on the job needs to know and understand how to: SA1. note the information communicated SA2. record the readings of various parameters in the prescribed format SA3. note down observations related to the activity SA4. write information documents to internal departments/ internal teams
	Reading Skills The user/individual on the job needs to know and understand how to: SA5. read vernacular/English language SA6. read and understand equipment manuals, health and safety instructions, memos, other company documents SA7. read from different sources- books, screens in machines and signage SA8. read internal information documents sent by internal teams
	Oral Communication (Listening and Speaking skills) The user/individual on the job needs to know and understand how to: SA9. express statements or information clearly so that others can hear and understand SA10. participate in and understand the main points of simple discussions SA11. respond appropriately to any queries SA12. communicate effectively with supervisor, peers and subordinates

SGJ/ N0120 **Work effectively with others**

B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. follow organization rule-based decision making process SB2. analyze critical points in day to day tasks and identify control measures to solve the issue SB3. handle issues in case the superior is not available (as per the authority matrix defined by the organisation)
	Plan and Organize
	The user/individual on the job needs to know and understand how to : SB4. planning and organization of work to meet deadlines SB5. work constructively and collaboratively with others SB6. support the superiors in scheduling tasks
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB7. follow organisation code of conduct SB8. manage relationships with customers with intent on satisfying its requirements for service delivery
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB9. recognize problems and search for solutions SB10. choose best methods to complete assigned tasks SB11. approach relevant authority when required
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain knowledge, observations and data to select course of action to perform tasks
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. critically evaluate information obtained from customers, supervisor and co-workers to perform day to day activities SB14. ask questions for better understanding

NOS Version Control

NOS Code	SGJ/ N0120		
Credits (NSQF)	TBD	Version number	1.0
Industry	Green Jobs	Drafted on	01/09/2016
Industry Sub-sector	Renewable Energy	Last reviewed on	15/02/2016
Occupation	Team management	Next review date	30/09/2019



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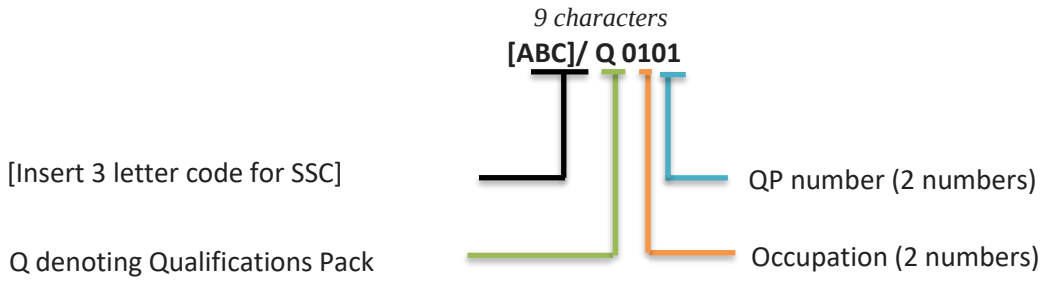
Annexure

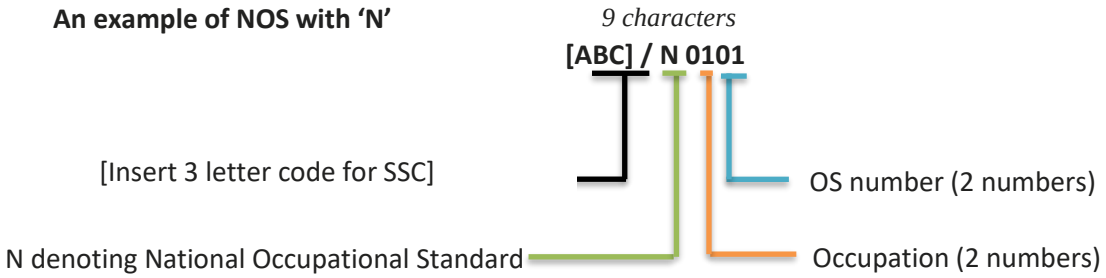
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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SGJ/ Q0115 Qualifications Pack for "Solar PV Maintenance Technician – Electrical (Ground Mount)"

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

Sub-sector		Range of Occupation numbers
Renewable Energy (01-35)	**Solar Photovoltaic**	01-05
	Solar Thermal	06-10
	Wind	11-15
	Hydro	16-20
	Biomass	21-25
	Geothermal	26-30
	All Renewables (Cross-cutting/ Enabling Activities)	31-35
Green Transportation (36 - 40)	**Alternative Fuel Transportation**	36-40
	Bio-fuels and Farming	40-45
	Other Green Transportation	46-50
Green Construction (51- 60)	**Green Buildings**	51-55
	Energy Efficiency	56-60
Waste Management (61- 65)	**Waste Management**	61-65
Water Management (66-70)	**Water and Wastewater Management**	66-70
Co-Generation (71 - 75)	**Co-generation**	71-75
Other Green Jobs (76- 99)	**Carbon Sinks**	76-80
	Environmental Compliance and Sustainability Planning	81-85
	Other Green Jobs	85-99

Sequence	Description	Example
Three letters	Industry name	SGJ
Slash	/	/
Next letter	Whether QP or NOS	Q or N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

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CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Solar PV Maintenance Technician – Electrical (Ground Mount)

Qualification Pack SGJ/Q0115

Sector Skill Council Green Jobs

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. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS **Total Marks: 200**			**Marks allocation**		
Assessment Outcomes	**Assessment Criteria for outcomes**	**Total Marks**	**Out of**	**Theory**	**Skills Practical**
SGJ/N0137 Carry out electrical maintenance of solar PV power plant	PC1. verify the connections, cables and junction boxes as per the design/ working drawings	**100**	4	2	2
	PC2. measure the string current and verify the connections between modules in each string periodically, if no monitoring of the strings at junction box/combiner box level has been designed		6	2	4
	PC3. check the integrity and working condition of all connections, fuses and circuit breakers within junction boxes/combiner boxes		6	2	4
	PC4. check the continuity of cables and wires to ensure proper electrical connections throughout the solar PV power plant upto the inverter input		6	3	3
	PC5. troubleshoot the identified faults and escalate the issue to superiors if faults cannot be identified or rectified		8	3	5
	PC6. verify the earthing and lightening protection systems as per the as-built drawings and report in case of any discrepancies		6	2	4

	PC7. measure the resistance of earthing systems and identify the earth pits where the resistance exceeds design norms		6	3	3
	PC8. check the continuity of the earthing system		6	3	3
	PC9. troubleshoot the identified issues and escalate the issue to superiors if faults cannot be rectified		8	3	5
	PC10. ensure proper cleaning of modules as per schedule and standard procedure and remove any shadowing objects		2	1	1
	PC11. check the module frame for any de-formation or defect		6	2	4
	PC12. check the integrity of module terminal box and interconnections		6	2	4
	PC13. check and record any defects in the modules to report it to the supervisor		6	2	4
	PC14. measure and record the readings from the inverter and the monitoring system		6	2	4
	PC15. clean /replace inverter cooling fan filters, removal of dust from electronic components and any other maintenance activity recommended by the manufacturer		8	2	6
	PC16. inform the supervisor or the appropriate supplier if there is any abnormal functioning of the inverter or the monitoring system		4	2	2
	PC17. clean the work area after completing the maintenance activity		2	1	1
	PC18. remove all the tools, consumables used from the work area		2	1	1
	PC19. complete the documentation and get the signature of the superior/ client		2	1	1
		TOTAL	**100**	**39**	**61**
SGJ/N0121 Maintain personal health & safety at solar PV power plant	PC1. identify corporate policies required for workplace safety	**50**	2	1	1
	PC2. identify requirements for safe work area and create a safe work environment		3	2	1
	PC3. identify contact person when workplace safety policies are violated		1	1	0
	PC4. provide information about incident/violation		1	1	0
	PC5. identify the location of first aid materials and administer first aid		2	1	1
	PC6. identify the personal protection equipment required for specific locations on-site		8	3	5
	PC7. identify expiry dates and wear & tear issues of specified equipment		2	1	1

	PC8. demonstrate safe and accepted practices for personal protection		8	3	5
	PC9. identify environmental hazards associated with the project site		4	2	2
	PC10. identify electrical hazards		4	2	2
	PC11. identify personal safety hazards or work site hazards and mitigate hazards		6	3	3
	PC12. select tools, equipment and testing devices needed to carry out the work		4	2	2
	PC13. demonstrate safe and proper use of required tools and equipment		5	2	3
		TOTAL	**50**	**24**	**26**
SGJ/N0120 Work effectively with others	PC1. accurately pass on information to the authorized persons who require it and within agreed timescale and confirm its receipt		4	2	2
	PC2. assist others in performing tasks in a positive manner where required and possible		4	2	2
	PC3. consult and assist others to maximize effectiveness and efficiency in carrying out tasks		4	2	2
	PC4. display appropriate communication etiquette while working		6	3	3
	PC5. display active listening skills while interacting with others at work		4	2	2
	PC6. demonstrate responsible and disciplined behaviours at the workplace		4	2	2
	PC7. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	**50**	3	1	2
	PC8. identify the need for common grounds with clients, team members, etc. and negotiate in an effective manner to achieve the same		3	1	2
	PC9. consider and respect the opinions, creativity, values, beliefs and perspectives of others		4	2	2
	PC10. ensure collaboration and group participation to achieve common goals		6	3	3
	PC11. promote a friendly, co-operative environment that is conducive to employee's sense of belonging		4	2	2
	PC12. facilitate an understanding and appreciation of the differences among team members		4	2	2
		TOTAL	**50**	**24**	**26**

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