Qualification Pack

Green Hydrogen Plant Junior Technician- Storage

QP Code: SGJ/Q4304

Version: 1.0

NSQF Level: 3

Skill Council for Green Jobs || 3rd Floor, CBIP Building, Malcha Marg, Chanakyapuri
New Delhi - 110021 || email:sarvesh@sscgj.in

Contents

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SGJ/Q4304: Green Hydrogen Plant Junior Technician- Storage

Brief Job Description

Green Hydrogen Plant Junior Technician- Storage would assist in installing Mechanical and Electrical equipment of a green hydrogen/green ammonia storage system along with perform the associated civil works. He/She would also assist in performing Pre-commissioning checks/tests and accordingly commission green hydrogen/green ammonia plant storage system.

Personal Attributes

This job requires the individual to concentrate on the job at hand and complete the work safely. He/she should be able to communicate in local language. He / She must possess energy and strength for physical work. And also have a basic understanding of social and natural environment. He/she should possess very good interpersonal skills to work in storage unit of green hydrogen plant.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. SGJ/N4301: Basics of Green Hydrogen Production
2. SGJ/N4302: Analyse Main Parts of green hydrogen production unit
3. SGJ/N4308: Introduction of Green Hydrogen Storage Technologies
4. SGJ/N4309: Installation of Green Hydrogen Storage system
5. SGJ/N4310: Perform operation and maintenance of hydrogen storage system
6. SGJ/N4049: Maintain Health & Safety at Green Hydrogen Storage project site
7. DGT/VSQ/N0101: Employability Skills (30 Hours)

Qualification Pack (QP) Parameters

Sector	Green Jobs
Sub-Sector	Green Hydrogen
Occupation	Hydrogen Plant Technician
Country	India

Qualification Pack

NSQF Level	3
Credits	12
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 8131.2100
Minimum Educational Qualification & Experience	10th grade pass with NA of experience OR 8th grade pass plus 2-year NTC plus 1 Year NAC with NA of experience OR Previous relevant Qualification of NSQF Level (NSQF Level 2.5) with 1-2 Years of experience
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	31/08/2026
NSQC Approval Date	31/08/2023
Version	1.0
Reference code on NQR	QG-03-ES-00767-2023-V1-SCGJ
NQR Version	1.0

Remarks:

Total 360 Hours: i.e 12 credits (Theory: 170 hours+Practical:100 hours+ 30 hours of employability skills + 60 hours of OJT)

SGJ/N4301: Basics of Green Hydrogen Production

Description

This unit specified the fundamentals of green hydrogen production system

Scope

The scope covers the following :

- Basics of Green Hydrogen Production

Elements and Performance Criteria

Basics of Green Hydrogen Production

To be competent, the user/individual on the job must be able to:

PC1. discuss properties and characteristics of Hydrogen

PC2. describe basic concepts of Hydrogen as fuel and energy carrier

PC3. discuss in brief various existing methods of hydrogen production and demonstrate various methods of hydrogen production.

PC4. discuss various colour code nomenclature of Hydrogen and demonstrate with chart colour code nomenclature of Hydrogen

PC5. discuss various technology options for production of Green Hydrogen and draw a flow diagram of green hydrogen production, conversion and end uses across the energy system

PC6. discuss key aspects and challenges related to production and storage of Green Hydrogen and do an activity for matching the process and source of production as applicable for different colour codes of hydrogen

PC7. discuss the end use applications of Green hydrogen in industry, transport and power production

PC8. discuss the role and responsibilities of various Green Hydrogen Plant Junior Technicians and demonstrate roles of various technicians in a green hydrogen plant

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organizations reporting structure

KU2. organizations documentation policy

KU3. organizational culture

KU4. Properties and characteristic of hydrogen

KU5. concept of hydrogen as fuel and energy carrier

KU6. signs, symbols and color codes and nomenclature used in hydrogen production

KU7. challenges related to production and storage of green hydrogen

KU8. basic skills required to perform the task of green hydrogen production

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. fill up relevant documents.
GS2. read vernacular language.
GS3. understand the various colour codes used in hydrogen production
GS4. express statements or information clearly so that others can understand
GS5. understand the main points of simple discussions
GS6. follow organization rule-based decision making process.
GS7. planning and organization of work to meet schedule.
GS8. work constructively and collaboratively with others.
GS9. communicate and create awareness.
GS10. recognize problems & approach relevant authority.
GS11. critically evaluate information obtained from supervisor and co-workers to perform day to day activities.
GS12. ask questions for better understanding.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Basics of Green Hydrogen Production	**30**	**20**	**-**	**-**
PC1. discuss properties and characteristics of Hydrogen	3	-	-	-
PC2. describe basic concepts of Hydrogen as fuel and energy carrier	3	-	-	-
PC3. discuss in brief various existing methods of hydrogen production and demonstrate various methods of hydrogen production.	4	2	-	-
PC4. discuss various colour code nomenclature of Hydrogen and demonstrate with chart colour code nomenclature of Hydrogen	4	3	-	-
PC5. discuss various technology options for production of Green Hydrogen and draw a flow diagram of green hydrogen production, conversion and end uses across the energy system	4	5	-	-
PC6. discuss key aspects and challenges related to production and storage of Green Hydrogen and do an activity for matching the process and source of production as applicable for different colour codes of hydrogen	4	5	-	-
PC7. discuss the end use applications of Green hydrogen in industry, transport and power production	4	-	-	-
PC8. discuss the role and responsibilities of various Green Hydrogen Plant Junior Technicians and demonstrate roles of various technicians in a green hydrogen plant	4	5	-	-
NOS Total	**30**	**20**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4301
NOS Name	Basics of Green Hydrogen Production
Sector	Green Jobs
Sub-Sector	Other Green Jobs
Occupation	Hydrogen Plant Technician
NSQF Level	3
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

SGJ/N4302: Analyse Main Parts of green hydrogen production unit

Description

This unit specifies identifying the main parts of green hydrogen production unit

Scope

The scope covers the following :

- Analyse Main Parts of green hydrogen production unit

Elements and Performance Criteria

Analyse Main Parts of green hydrogen production unit

To be competent, the user/individual on the job must be able to:

PC1. identify key parts and components of the Green Hydrogen plant including electrical, mechanical and civil components and illustrate the schematic of Green hydrogen production plant

PC2. discuss functions of each part and components and illustrate key components of the plant and outline their functions through plant schematic

PC3. discuss fundamental principles of main components on which they operate

PC4. explain basics of plant layout and illustrate how to interpret the Plant Layout including various equipments

PC5. discuss the plant components most relevant to the course and demonstrate how to interpret signs, notices and/or cautions at project site.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organizations reporting structure

KU2. organizations documentation policy

KU3. organizational culture

KU4. Properties and characteristic of hydrogen

KU5. concept of hydrogen as fuel and energy carrier

KU6. signs, symbols and color codes and nomenclature used in hydrogen production

KU7. challenges related to production and storage of green hydrogen

KU8. basic skills required to perform the task of green hydrogen production

KU9. understanding relevant regulations and safety standards

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. fill up relevant documents
GS2. read vernacular language
GS3. understand the various colour codes used in hydrogen production
GS4. express statements or information clearly so that others can understand
GS5. understand the main points of simple discussions
GS6. follow organization rule-based decision making process
GS7. planning and organization of work to meet schedule
GS8. work constructively and collaboratively with others
GS9. communicate and create awareness
GS10. ask questions for better understanding.
GS11. critically evaluate information obtained from supervisor and co-workers to perform day to day activities.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Analyse Main Parts of green hydrogen production unit	**30**	**20**	**-**	**-**
PC1. identify key parts and components of the Green Hydrogen plant including electrical, mechanical and civil components and illustrate the schematic of Green hydrogen production plant	6	5	-	-
PC2. discuss functions of each part and components and illustrate key components of the plant and outline their functions through plant schematic	6	5	-	-
PC3. discuss fundamental principles of main components on which they operate	6	5	-	-
PC4. explain basics of plant layout and illustrate how to interpret the Plant Layout including various equipments	6	-	-	-
PC5. discuss the plant components most relevant to the course and demonstrate how to interpret signs, notices and/or cautions at project site.	6	5	-	-
NOS Total	**30**	**20**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4302
NOS Name	Analyse Main Parts of green hydrogen production unit
Sector	Green Jobs
Sub-Sector	Other Green Jobs
Occupation	Hydrogen Plant Technician
NSQF Level	3
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

SGJ/N4308: Introduction of Green Hydrogen Storage Technologies

Description

This unit gives introduction of Green Hydrogen Storage Technologies

Scope

The scope covers the following :

- Importance Green Hydrogen Storage
- Green hydrogen storage for various application.
- Hydrogen storage methodology for various applications.

Elements and Performance Criteria

Introduction of Green Hydrogen Storage Technologies

To be competent, the user/individual on the job must be able to:

PC1. discuss and provide an overview and need of Green Hydrogen Storage and illustrate hydrogen storage system through Pictures, schematic and videos

PC2. explain the Importance of Hydrogen Storage and demonstrate hydrogen storage through model (e.g. Fuel cell).

PC3. explain how hydrogen storage is important for Fuel cell technologies and standalone power storage device

PC4. discuss hydrogen storage methodology for various application like stationary power solution, portable power system and for transport and mobility application and • Demonstrate hydrogen storage methodology for various application like stationary power solution, portable power system and for transport and mobility application through small models

PC5. explain main safety and technical issues associated with compressed hydrogen storage

PC6. describe the high-pressure storage and low-pressure storage

PC7. explain role of temperature and pressure in hydrogen storage and demonstrate the role of temperature and pressure and the process of measuring them in hydrogen storage

PC8. identify the key attributes of green hydrogen storage systems in operational projects from India and overseas and showcase the key aspects of storage from existing projects and other green hydrogen projects from India and overseas.

Describe various methods of Hydrogen storage

To be competent, the user/individual on the job must be able to:

PC9. describe the various storage methodology for green hydrogen and show how to implement the procedure for storing Hydrogen through models and schematic

PC10. distinguish between various storage options of hydrogen: compressed gas, liquefied and storage in solids and demonstrate the working of compressor and its working principle

PC11. describe Hydrogen storage in liquid and gaseous form

PC12. discuss hydrogen storage at high pressure

PC13. explain about hydrogen storage under cryogenic temperature

PC14. discuss the geological storage method and its advantage and demonstrate various method of hydrogen storage on a small scale

PC15. describe different types of storage vessels currently in use to store compressed hydrogen and demonstrate how to differentiate type-I, II-, III- & IV-cylinders

PC16. discuss the safety concept and SOP for Hydrogen storage system

PC17. discuss the type-I, II-, III- & IV-cylinder characteristics and use case and demonstrate the vessels types (I, II, III&IV) for green hydrogen storage

PC18. discuss the importance of carbon fibre used in to type-IV cylinder and demonstrate where to use which type of cylinder

PC19. discuss about the existing methods for green hydrogen storage in India and Overseas and showcase the existing methods for green hydrogen storage in India and Overseas through pictures and videos.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's installation policy

KU2. company's customer support policy

KU3. document information using appropriate corporate forms

KU4. obtain authorization from specified field safety officer and supervisor

KU5. relevant personal protective equipments required within the manufacturing facility

KU6. relevant standards and regulations to be followed in the manufacturing facility

KU7. occupational health and safety (OHS) standards to be followed in the manufacturing facility

KU8. risk identification and mitigation procedure for safe workin in a manufacturing facility

KU9. know how of tools & tackles required to carry out the work

KU10. know the storage methodology of green hydrogen

KU11. types of cylinder used for hydrogen storage

KU12. principle and working of compressor

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. fill up documentation applicable to one's role

GS2. read vernacular/english language

GS3. • read and understand manuals, health and safety instructions, memos, other company
• documents

GS4. ability to read from different sources- books, screens in machines and signage

GS5. • understand the various colour codes, as per standard electrical, mechanical and civil
• nomenclature

GS6. express statements or information clearly so that others can hear and understand

GS7. participate in and understand the main points of simple discussions

GS8. respond appropriately to any queries

GS9. communicate with peers, supervisor and sub-ordinates

GS10. follow organisation rule- based decision making process

GS11. take decision with systematic course of actions and/or response

GS12. plan and organize work schedule to meet deadlines

GS13. plan to utilise time and equipment's effectively

GS14. plan to utilise time and equipment's effectively

GS15. recognize problems and search for solutions

GS16. • apply domain knowledge, observations and data to select course of action to perform tasks
• related to the job role

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction of Green Hydrogen Storage Technologies	**11**	**10**	**-**	**-**
PC1. discuss and provide an overview and need of Green Hydrogen Storage and illustrate hydrogen storage system through Pictures, schematic and videos	1	2	-	-
PC2. explain the Importance of Hydrogen Storage and demonstrate hydrogen storage through model (e.g. Fuel cell).	1	2	-	-
PC3. explain how hydrogen storage is important for Fuel cell technologies and standalone power storage device	2	-	-	-
PC4. discuss hydrogen storage methodology for various application like stationary power solution, portable power system and for transport and mobility application and • Demonstrate hydrogen storage methodology for various application like stationary power solution, portable power system and for transport and mobility application through small models	1	2	-	-
PC5. explain main safety and technical issues associated with compressed hydrogen storage	2	-	-	-
PC6. describe the high-pressure storage and low-pressure storage	2	-	-	-
PC7. explain role of temperature and pressure in hydrogen storage and demonstrate the role of temperature and pressure and the process of measuring them in hydrogen storage	1	2	-	-
PC8. identify the key attributes of green hydrogen storage systems in operational projects from India and overseas and showcase the key aspects of storage from existing projects and other green hydrogen projects from India and overseas.	1	2	-	-
Describe various methods of Hydrogen storage	**15**	**14**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. describe the various storage methodology for green hydrogen and show how to implement the procedure for storing Hydrogen through models and schematic	1	2	-	-
PC10. distinguish between various storage options of hydrogen: compressed gas, liquefied and storage in solids and demonstrate the working of compressor and its working principle	1	2	-	-
PC11. describe Hydrogen storage in liquid and gaseous form	2	-	-	-
PC12. discuss hydrogen storage at high pressure	2	-	-	-
PC13. explain about hydrogen storage under cryogenic temperature	2	-	-	-
PC14. discuss the geological storage method and its advantage and demonstrate various method of hydrogen storage on a small scale	1	2	-	-
PC15. describe different types of storage vessels currently in use to store compressed hydrogen and demonstrate how to differentiate type-I, II-, III- & IV-cylinders	1	2	-	-
PC16. discuss the safety concept and SOP for Hydrogen storage system	1	-	-	-
PC17. discuss the type-I, II-, III- & IV-cylinder characteristics and use case and demonstrate the vessels types (I, II, III&IV) for green hydrogen storage	1	2	-	-
PC18. discuss the importance of carbon fibre used in to type-IV cylinder and demonstrate where to use which type of cylinder	1	2	-	-
PC19. discuss about the existing methods for green hydrogen storage in India and Overseas and showcase the existing methods for green hydrogen storage in India and Overseas through pictures and videos.	2	2	-	-
NOS Total	**26**	**24**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4308
NOS Name	Introduction of Green Hydrogen Storage Technologies
Sector	Green Jobs
Sub-Sector	Green Hydrogen
Occupation	Hydrogen Plant Technician
NSQF Level	3.0
Credits	2
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

SGJ/N4309: Installation of Green Hydrogen Storage system

Description

This unit explain about Installation of Green Hydrogen Storage system

Scope

The scope covers the following :

- About installation of Hydrogen storage unit.
- Process of identifying leakages during installation of hydrogen storage unit
- tests used in testing a hydrogen storage unit
- components required in installing hydrogen storage unit.

Elements and Performance Criteria

Installation of Hydrogen storage system-I

To be competent, the user/individual on the job must be able to:

PC1. explain the layout of storage unit

PC2. discuss how to use Installation manual for cylinder handling and installation

PC3. discuss the Parts of Compressed Hydrogen storage system and show how to identify the tools and equipment to perform the installation of compressed hydrogen gas vessels for storage as per concerned technical sheets

PC4. discuss the tools required for installation of Storage system show how to handle different tools, equipment as per concerned standard and industry practices.

PC5. discuss how to perform installation of high-pressure cylinder and demonstrate how to manage high pressure during storage of hydrogen.

PC6. discuss how to handle high pressure cylinder during installation

PC7. discuss do’s and don’t at installation site and demonstrate how to read and interpret the installation manual.

PC8. discuss how to move cylinder from one place to other

PC9. discuss the safe installation of various components of hydrogen storage system and demonstrate all valves and other mechanical equipments associated with hydrogen storage vessels

PC10. discuss importance of hydrogen components and systems must be isolated from heat source and demonstrate how to insulate hydrogen storage tank vessels.

PC11. discuss installation of hydrogen components are marked in accordance with the standard

PC12. discuss the importance of labelling each cylinder/container containing information

PC13. discuss the role and how to perform the safe installation of overpressure Relief Device (PRD/TPRD).

PC14. discuss main aspects of storage tank testing in general and bonfire test protocols in particular

PC15. discuss testing and commissioning of storage tank in accordance with relevant code and standard

PC16. • discuss the storage vessel is successfully passed but not limited to the following test only:
• Bonfire test.
• Hydrostatic burst test
• Ambient pressure cycling test
• Penetration test
• Leak-before-break test

Installation of Hydrogen storage system-II

To be competent, the user/individual on the job must be able to:

PC17. discuss the installation of various protective valve of cylinder and demonstrate the valves and its function in storage

PC18. perform installation of leak detection and fire alarm system and demonstrate fire alarms installed in Hydrogen storage system

PC19. • discuss the importance and how to perform safe installation of various valve as per standard practice and guideline and design:
• Check valve
• Automatic shut-off valve
• Pressure Relief Valve (PRV)
• Excess flow valve
• Service shut-off valve

PC20. discuss how to perform installation of Pressure indicator, Pressure regulator Manual cylinder valve, Pressure regulator, Pressure indicator, Excess flow valve, Filters, Pressure/Temperature/Hydrogen/Flow sensors and hydrogen leakage detection sensors and Show how to read and interpret process flow diagram and pipe instrument diagram of hydrogen storage plant

PC21. discuss how to perform Installation of overpressure protection device and analyse all type of system safety and protective devices used in hydrogen storage plant.

PC22. demonstrate the function of drains and vents associated with hydrogen storage tanks

PC23. identify key learnings of successfully installed hydrogen storage unit for green hydrogen production in India and overseas and analyse key learnings of successfully installed hydrogen storage unit for green hydrogen production in India and overseas

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's installation policy

KU2. company's customer support policy

KU3. document information using appropriate corporate forms

KU4. obtain authorization from specified field safety officer and supervisor

KU5. relevant personal protective equipments required within the facility

KU6. relevant standards and regulations to be followed in the facility

KU7. occupational health and safety (OHS) standards to be followed in the facility

KU8. risk identification and mitigation procedure for safe work in in a facility

KU9. know how of tools & tackles required to carry out the work

KU10. understanding of Protective valve of Hydrogen storage unit

KU11. types of system safety and protective devices used in hydrogen storage plant.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. fill up documentation applicable to one's role

GS2. read vernacular/english language

GS3. • read and understand manuals, health and safety instructions, memos, other company
• documents

GS4. ability to read from different sources- books, screens in machines and signage

GS5. • understand the various colour codes, as per standard electrical, mechanical and civil
• nomenclature

GS6. express statements or information clearly so that others can hear and understand

GS7. participate in and understand the main points of simple discussions

GS8. respond appropriately to any queries

GS9. communicate with peers, supervisor and sub-ordinates

GS10. follow organisation rule- based decision making process

GS11. take decision with systematic course of actions and/or response

GS12. plan and organize work schedule to meet deadlines

GS13. plan to utilise time and equipment's effectively

GS14. work constructively and collaboratively with others

GS15. follow organisational code of conduct

GS16. recognize problems and search for solutions

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Installation of Hydrogen storage system-I	**18**	**12**	**-**	**-**
PC1. explain the layout of storage unit	1	-	-	-
PC2. discuss how to use Installation manual for cylinder handling and installation	1	-	-	-
PC3. discuss the Parts of Compressed Hydrogen storage system and show how to identify the tools and equipment to perform the installation of compressed hydrogen gas vessels for storage as per concerned technical sheets	1	2	-	-
PC4. discuss the tools required for installation of Storage system show how to handle different tools, equipment as per concerned standard and industry practices.	1	2	-	-
PC5. discuss how to perform installation of high-pressure cylinder and demonstrate how to manage high pressure during storage of hydrogen.	1	2	-	-
PC6. discuss how to handle high pressure cylinder during installation	2	-	-	-
PC7. discuss do's and don't at installation site and demonstrate how to read and interpret the installation manual.	1	2	-	-
PC8. discuss how to move cylinder from one place to other	2	-	-	-
PC9. discuss the safe installation of various components of hydrogen storage system and demonstrate all valves and other mechanical equipments associated with hydrogen storage vessels	1	2	-	-
PC10. discuss importance of hydrogen components and systems must be isolated from heat source and demonstrate how to insulate hydrogen storage tank vessels.	1	2	-	-
PC11. discuss installation of hydrogen components are marked in accordance with the standard	1	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. discuss the importance of labelling each cylinder/container containing information	1	-	-	-
PC13. discuss the role and how to perform the safe installation of overpressure Relief Device (PRD/TPRD).	1	-	-	-
PC14. discuss main aspects of storage tank testing in general and bonfire test protocols in particular	1	-	-	-
PC15. discuss testing and commissioning of storage tank in accordance with relevant code and standard	1	-	-	-
PC16. • discuss the storage vessel is successfully passed but not limited to the following test only: • Bonfire test. • Hydrostatic burst test • Ambient pressure cycling test • Penetration test • Leak-before-break test	1	-	-	-
Installation of Hydrogen storage system-II	**8**	**12**	**-**	**-**
PC17. discuss the installation of various protective valve of cylinder and demonstrate the valves and its function in storage	1	2	-	-
PC18. perform installation of leak detection and fire alarm system and demonstrate fire alarms installed in Hydrogen storage system	1	2	-	-
PC19. • discuss the importance and how to perform safe installation of various valve as per standard practice and guideline and design: • Check valve • Automatic shut-off valve • Pressure Relief Valve (PRV) • Excess flow valve • Service shut-off valve	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. discuss how to perform installation of Pressure indicator, Pressure regulator Manual cylinder valve, Pressure regulator, Pressure indicator, Excess flow valve, Filters, Pressure/Temperature/Hydrogen/Flow sensors and hydrogen leakage detection sensors and Show how to read and interpret process flow diagram and pipe instrument diagram of hydrogen storage plant	1	2	-	-
PC21. discuss how to perform Installation of overpressure protection device and analyse all type of system safety and protective devices used in hydrogen storage plant.	1	2	-	-
PC22. demonstrate the function of drains and vents associated with hydrogen storage tanks	1	-	-	-
PC23. identify key learnings of successfully installed hydrogen storage unit for green hydrogen production in India and overseas and analyse key learnings of successfully installed hydrogen storage unit for green hydrogen production in India and overseas	2	2	-	-
NOS Total	**26**	**24**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4309
NOS Name	Installation of Green Hydrogen Storage system
Sector	Green Jobs
Sub-Sector	Green Hydrogen
Occupation	Hydrogen Plant Technician
NSQF Level	3.0
Credits	3
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

SGJ/N4310: Perform operation and maintenance of hydrogen storage system

Description

This unit is about to perform operation and maintenance of hydrogen storage system

Scope

The scope covers the following :

- Understand requirements for Standard operating Procedure at Hydrogen Storage site.
- Operation of various Valves associated with Hydrogen Storage Units.
- Routine maintenance and preventive maintenance of Hydrogen storage system

Elements and Performance Criteria

Perform operation and maintenance of hydrogen storage system

To be competent, the user/individual on the job must be able to:

PC1. discuss how to use the operation and maintenance manual for Hydrogen storage system and demonstrate how to follow the Standard operating procedure for Plant operation & Maintenance.

PC2. discuss the routine inspection procedure and maintaining the event logbook demonstrate functioning of Pressure indicator, Pressure regulator Manual cylinder valve, Pressure regulator, Pressure indicator, Excess flow valve, Filters.

PC3. discuss the different operating conditions like, temperature and pressure conditions and demonstrate routine inspection procedure and maintaining the event logbook

PC4. explain Start up, shutdown, and operate the production processes and demonstrate routine inspection procedure and maintaining the event logbook.

PC5. discuss the preventive maintenance plan and explain the activities carried out during routine maintenance work

PC6. discuss how to store hydrogen in tank up to rated capacity, and its testing and demonstrate loading and and unloading of Hydrogen in hydrogen storage unit

PC7. checking and detection of leakage of storage vessel or tank

PC8. discuss how to purge the hydrogen out of the equipment during maintenance

PC9. • discuss general Step for repairing or replacing the equipment Includes-
• Preparing the system including isolating energy sources via Lockout/Tagout (LOTO) and purging hydrogen out of the equipment
• Inspection
• Doing the work
• Leak testing
• Purging air out of the equipment

PC10. discuss importance of check the hydrogen purity

PC11. discuss the fouling issue and its prevention by routine maintenance

PC12. discuss the all measuring instruments, controllers, and control valves working properly

PC13. discuss the function and attribute of pressure control function and other safety device functions and demonstrate the function and attribute of safety device functions

PC14. identify best practices for safe and successful operation and maintenance of hydrogen storage in green hydrogen production in India and overseas and analyse best practices for safe and successful operation and maintenance of hydrogen storage in green hydrogen production in India and overseas.

PC15. demonstrate how to identify Motorised operating valve and manual isolation valves

PC16. demonstrate how to use various tools used in maintenance for hydrogen storage plant.

PC17. demonstrate permit to work system

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's installation policy

KU2. document information using appropriate corporate forms

KU3. obtain authorization from specified field safety officer and supervisor

KU4. relevant personal protective equipments required within the facility

KU5. relevant standards and regulations to be followed in the manufacturing facility

KU6. occupational health and safety (OHS) standards to be followed in the manufacturing facility

KU7. risk identification and mitigation procedure for safe work in a manufacturing facility

KU8. know how of tools & tackles required to carry out the work

KU9. understand functioning of Pressure indicator, Pressure regulator Manual cylinder valve, Pressure regulator, Pressure indicator, Excess flow valve, Filters

KU10. understand working of all measuring instruments, controllers, and control valves

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. fill up documentation applicable to one's role

GS2. read vernacular/english language

GS3. • read and understand manuals, health and safety instructions, memos, other company
• documents

GS4. ability to read from different sources- books, screens in machines and signage

GS5. • understand the various colour codes, as per standard electrical, mechanical and civil
• nomenclature

GS6. express statements or information clearly so that others can hear and understand

GS7. participate in and understand the main points of simple discussions

GS8. respond appropriately to any queries

GS9. communicate with peers, supervisor and sub-ordinates

GS10. follow organisation rule- based decision making process

GS11. take decision with systematic course of actions and/or response

GS12. plan to utilise time and equipment's effectively

GS13. plan and organize work schedule to meet deadlines

GS14. follow organisational code of conduct

GS15. work constructively and collaboratively with others

GS16. recognize problems and search for solutions

GS17. • critically evaluate information obtained from customers, supervisor and co-workers to
• perform day to day activities

GS18. ask questions for better understanding

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform operation and maintenance of hydrogen storage system	**28**	**22**	**-**	**-**
PC1. discuss how to use the operation and maintenance manual for Hydrogen storage system and demonstrate how to follow the Standard operating procedure for Plant operation & Maintenance.	2	2	-	-
PC2. discuss the routine inspection procedure and maintaining the event logbook demonstrate functioning of Pressure indicator, Pressure regulator Manual cylinder valve, Pressure regulator, Pressure indicator, Excess flow valve, Filters.	2	2	-	-
PC3. discuss the different operating conditions like, temperature and pressure conditions and demonstrate routine inspection procedure and maintaining the event logbook	2	2	-	-
PC4. explain Start up, shutdown, and operate the production processes and demonstrate routine inspection procedure and maintaining the event logbook.	2	2	-	-
PC5. discuss the preventive maintenance plan and explain the activities carried out during routine maintenance work	2	-	-	-
PC6. discuss how to store hydrogen in tank up to rated capacity, and its testing and demonstrate loading and and unloading of Hydrogen in hydrogen storage unit	2	2	-	-
PC7. checking and detection of leakage of storage vessel or tank	2	-	-	-
PC8. discuss how to purge the hydrogen out of the equipment during maintenance	2	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. • discuss general Step for repairing or replacing the equipment Includes- • Preparing the system including isolating energy sources via Lockout/Tagout (LOTO) and purging hydrogen out of the equipment • Inspection • Doing the work • Leak testing • Purging air out of the equipment	2	2	-	-
PC10. discuss importance of check the hydrogen purity	2	-	-	-
PC11. discuss the fouling issue and its prevention by routine maintenance	2	-	-	-
PC12. discuss the all measuring instruments, controllers, and control valves working properly	2	-	-	-
PC13. discuss the function and attribute of pressure control function and other safety device functions and demonstrate the function and attribute of safety device functions	2	2	-	-
PC14. identify best practices for safe and successful operation and maintenance of hydrogen storage in green hydrogen production in India and overseas and analyse best practices for safe and successful operation and maintenance of hydrogen storage in green hydrogen production in India and overseas.	2	2	-	-
PC15. demonstrate how to identify Motorised operating valve and manual isolation valves	-	2	-	-
PC16. demonstrate how to use various tools used in maintenance for hydrogen storage plant.	-	2	-	-
PC17. demonstrate permit to work system	-	2	-	-
NOS Total	**28**	**22**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4310
NOS Name	Perform operation and maintenance of hydrogen storage system
Sector	Green Jobs
Sub-Sector	Green Hydrogen
Occupation	Hydrogen Plant Technician
NSQF Level	3.0
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

SGJ/N4049: Maintain Health & Safety at Green Hydrogen Storage project site

Description

Perform Health and safety measures at Green hydrogen storage Project site.

Scope

The scope covers the following :

- This unit explain about how to perform Health & Safety measures at Green Hydrogen storage project site
- the requirements for safe work area at hydrogen Storage project site
- the hazards associated with Hydrogen storage system and their mitigation measures

Elements and Performance Criteria

Maintain Health & Safety at Green Hydrogen Storage project site

To be competent, the user/individual on the job must be able to:

PC1. explain the requirements for safe work area at Hydrogen storage units in hydrogen generation project site.

PC2. explain the importance of Occupational health & Safety standards and regulations for Basic considerations for the safety of Hydrogen Storage systems and demonstrate how to follow necessary and adequate safety measures including personal protective equipment and precautions to avoid any accident at hydrogen generation site

PC3. describe potential causes of emergency such as gas leaks, fire, explosion, bomb threatening, natural calamities etc and show how to comply with all applicable statutory requirements along with safety regulations in terms of fire protection

PC4. discuss importance of different detectors and safety tools

PC5. review the Material Safety Data Sheet and labels of chemicals contained in cylinders in order to be aware of their hazards and precautionary measures

PC6. identify the hazards associated with Electrolyser and hydrogen storage system.

PC7. identify the personal protective equipment used for the specific purpose and demonstrate the usage of personal protective equipment for ensuring safety during installation and O&M work of Hydrogen Storage

PC8. discuss the proper usage of job specific PPE

PC9. discuss the importance of wearing reflective jackets at job site.

PC10. explain the importance of administering first aid and demonstrate how to administer first aid.

PC11. discuss Mock testing of firefighting system and demonstrate the use of fire extinguishers, fire detection and alarm system.

PC12. discuss about incorporation of good housekeeping practices and infection control guidelines and demonstrate good housekeeping and infection control & prevention practices.

PC13. identify best practices in health and safety for safe and successful production and storage of green hydrogen in India and overseas and analyse best practices in health and safety for safe and successful production and storage of green hydrogen in India and overseas.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's installation policy
KU2. document information using appropriate corporate forms
KU3. obtain authorization from specified field safety officer and supervisor
KU4. relevant personal protective equipments required within the facility
KU5. relevant standards and regulations to be followed in the facility
KU6. occupational health and safety (OHS) standards to be followed in the facility
KU7. risk identification and mitigation procedure for safe work in in a facility
KU8. know how of tools & tackles required to carry out the work
KU9. understand the various colour codes used in hydrogen production and storage
KU10. challenges related to production and storage of green hydrogen
KU11. Properties and characteristic of hydrogen

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. organizations reporting structure
GS2. organizations documentation policy
GS3. organizational culture
GS4. signs, symbols and color codes and nomenclature used in hydrogen production
GS5. understanding relevant regulations and safety standards
GS6. basic skills required to perform the task of green hydrogen production
GS7. specific requirements relating to hydrogen infrastructure
GS8. express statements or information clearly so that others can understand
GS9. follow organization rule-based decision making process
GS10. planning and organization of work to meet schedule

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain Health & Safety at Green Hydrogen Storage project site	**30**	**20**	**-**	**-**
PC1. explain the requirements for safe work area at Hydrogen storage units in hydrogen generation project site.	2	-	-	-
PC2. explain the importance of Occupational health & Safety standards and regulations for Basic considerations for the safety of Hydrogen Storage systems and demonstrate how to follow necessary and adequate safety measures including personal protective equipment and precautions to avoid any accident at hydrogen generation site	2	2	-	-
PC3. describe potential causes of emergency such as gas leaks, fire, explosion, bomb threatening, natural calamities etc and show how to comply with all applicable statutory requirements along with safety regulations in terms of fire protection	2	2	-	-
PC4. discuss importance of different detectors and safety tools	2	-	-	-
PC5. review the Material Safety Data Sheet and labels of chemicals contained in cylinders in order to be aware of their hazards and precautionary measures	2	-	-	-
PC6. identify the hazards associated with Electrolyser and hydrogen storage system.	2	-	-	-
PC7. identify the personal protective equipment used for the specific purpose and demonstrate the usage of personal protective equipment for ensuring safety during installation and O&M work of Hydrogen Storage	3	3	-	-
PC8. discuss the proper usage of job specific PPE	2	-	-	-
PC9. discuss the importance of wearing reflective jackets at job site.	2	-	-	-
PC10. explain the importance of administering first aid and demonstrate how to administer first aid.	3	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. discuss Mock testing of firefighting system and demonstrate the use of fire extinguishers, fire detection and alarm system.	2	3	-	-
PC12. discuss about incorporation of good housekeeping practices and infection control guidelines and demonstrate good housekeeping and infection control & prevention practices.	3	4	-	-
PC13. identify best practices in health and safety for safe and successful production and storage of green hydrogen in India and overseas and analyse best practices in health and safety for safe and successful production and storage of green hydrogen in India and overseas.	3	3	-	-
NOS Total	**30**	**20**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4049
NOS Name	Maintain Health & Safety at Green Hydrogen Storage project site
Sector	Green Jobs
Sub-Sector	Green Hydrogen
Occupation	Hydrogen Plant Technician
NSQF Level	3
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

KU10. how to compute income and expenses
KU11. importance of maintaining safety and security in financial transactions
KU12. different legal rights and laws
KU13. how to operate digital devices and applications safely and securely
KU14. ways to identify business opportunities
KU15. types of customers and their needs
KU16. how to apply for a job and prepare for an interview
KU17. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate effectively using appropriate language
GS2. behave politely and appropriately with all
GS3. perform basic calculations
GS4. solve problems effectively
GS5. be careful and attentive at work
GS6. use time effectively
GS7. maintain hygiene and sanitisation to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
Basic English Skills	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	**4**	**6**	**-**	**-**
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	**3**	**5**	**-**	**-**
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	**2**	**2**	**-**	**-**
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**1**	**3**	**-**	**-**
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	16/12/2025
Next Review Date	18/11/2028
NSQC Clearance Date	16/12/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification will be created by the Sector Skill Council. Each Element/ 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 Element/ 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 these criteria.

6. To pass the Qualification assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N4301.Basics of Green Hydrogen Production	30	20	0	0	50	14
SGJ/N4302.Analyse Main Parts of green hydrogen production unit	30	20	0	0	50	14
SGJ/N4308.Introduction of Green Hydrogen Storage Technologies	26	24	0	0	50	14
SGJ/N4309.Installation of Green Hydrogen Storage system	26	24	0	0	50	14
SGJ/N4310.Perform operation and maintenance of hydrogen storage system	28	22	-	-	50	14
SGJ/N4049.Maintain Health & Safety at Green Hydrogen Storage project site	30	20	-	-	50	16
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	14
Total	**190**	**160**	**-**	**-**	**350**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) 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 OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
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 (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order 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 (GS)	Core skills or Generic Skills (GS) 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. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
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.