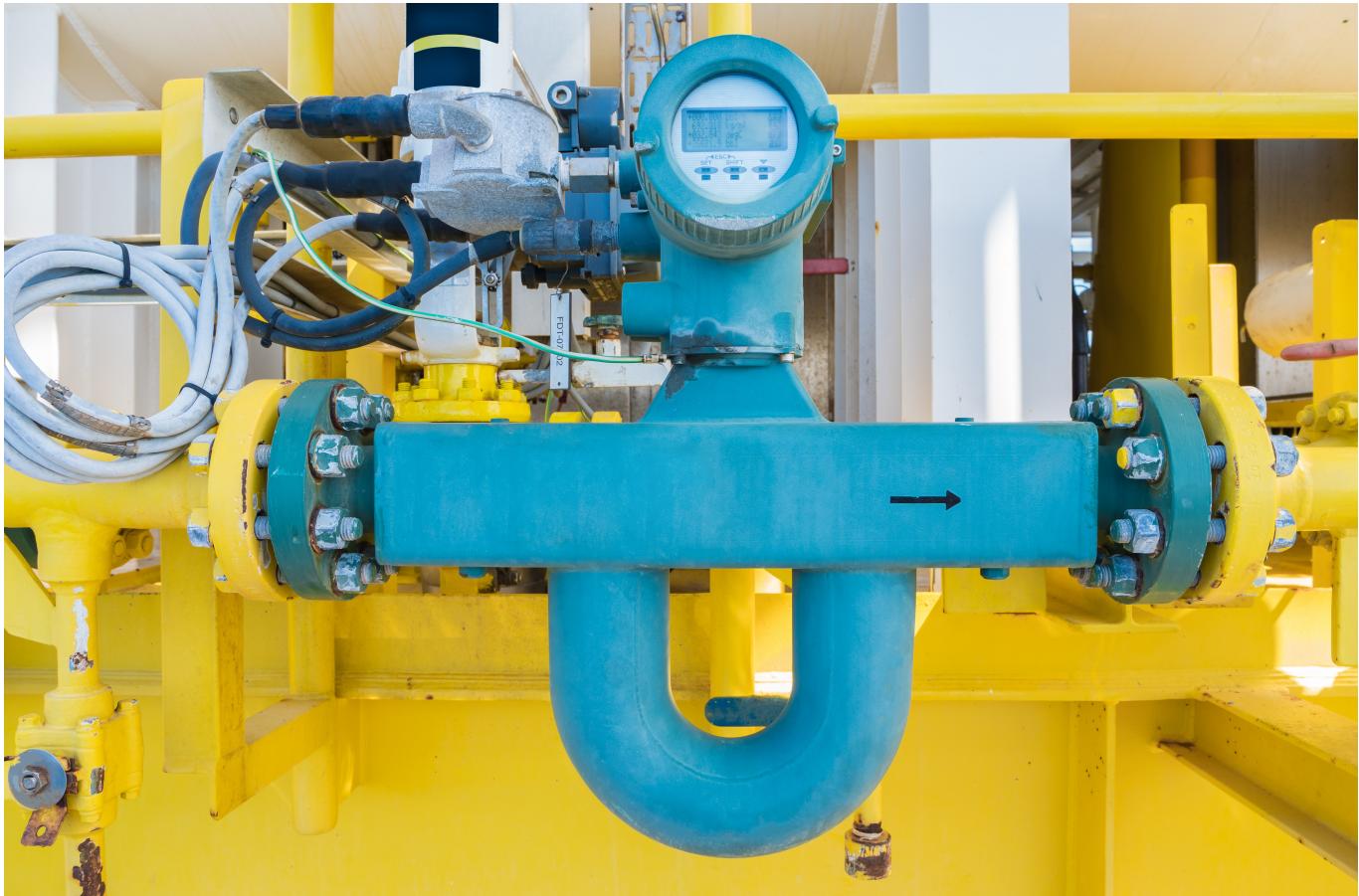


### Qualification Pack



# Process Instrument Technician (Oil & Gas)

QP Code: HYC/Q6201

Version: 2.0

NSQF Level: 4

Hydrocarbon Sector Skill Council || OIDB Bhawan, Tower C, 2nd Floor, Plot No. 2, Vikas Marg, Sector - 73

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## Qualification Pack

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## Qualification Pack

### HYC/Q6201: Process Instrument Technician (Oil & Gas)

#### Brief Job Description

The Process Instrument Technician (Oil & Gas) is required in all kinds of process industries including gas processing plants, oil refineries, fertilizer plants, chemical process plants, gas/oil pipelines, compressor stations etc. The individual assist line supervisor/engineer to perform maintenance activities of measuring and controlling process equipment in field as well as in control room in calibration and installation in accordance with approved procedures.

#### Personal Attributes

The individual should have a good sense of responsibility, must be alert at all the times and able to work independently and in a team. The personnel should be able to concentrate on work and have process management skills.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [HYC/N6201: Perform custody transfer metering](#)
2. [HYC/N6202: Maintain & calibrate pressure Safety Valves \(PSV\)](#)
3. [HYC/N6203: Calibrate LEL gas detector](#)
4. [HYC/N6204: Carry out inspection, calibration and maintenance of instruments and control equipment in oil and gas setup](#)
5. [HYC/N9301: Working Effectively in a team](#)
6. [HYC/N9302: Maintain health, safety and security procedures](#)
7. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

#### Qualification Pack (QP) Parameters

<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Midstream, Downstream
<b>Occupation</b>	Calibration and Instrumentation
<b>Country</b>	India

## Qualification Pack

<b>NSQF Level</b>	4
<b>Credits</b>	16
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7311.0101
<b>Minimum Educational Qualification &amp; Experience</b>	<p>Completed 2nd year of the 3-year diploma after 10 (in engineering trade)  OR  10th grade pass plus 1-year NTC/ NAC (in engineering trade)  OR  8th grade pass plus 2-year NTC plus 1 Year NAC  OR  12th grade Pass (science)  OR  11th grade pass (science) with 1 Year of experience  OR  10th grade pass with 2 Years of experience  OR  Previous relevant Qualification of NSQF Level (3.5) with 1-2 Years of experience  OR  Previous relevant Qualification of NSQF Level (3.0) with 3 Years of experience</p>
<b>Minimum Level of Education for Training in School</b>	12th Class
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	28/09/2026
<b>NSQC Approval Date</b>	29/09/2023
<b>Version</b>	2.0
<b>Reference code on NQR</b>	QG-04-HC-01019-2023-V2-HSSCI
<b>NQR Version</b>	2.0

## Qualification Pack

### HYC/N6201: Perform custody transfer metering

#### Description

This Unit covers setting ,adjustment, validation or verification of custody transfer metering by using reference standards in accordance with predetermined standard procedures. The candidates will be expected to work under minimal supervision , taking personal responsibility for own actions , and for the quality and accuracy of the work carried out.

#### Scope

The scope covers the following :

- Checking installation of custody meters
- Observing the process and diagnostic parameters
- Calibration of custody meters and auxiliary instruments
- Analyze and report test results.

#### Elements and Performance Criteria

##### *Checking installation of custody meters*

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

- PC1.** identify type of custody flow meter - eg-Turbine, Ultrasonic, Coriolis and principle of their operation
- PC2.** check installation as per design considerations like maximum/minimum operating process parameters of the fluid, the general characteristics of the fluid, ambient conditions and location of skid
- PC3.** check installation as per design consideration for uni-directional or bi-directional flow
- PC4.** read general arrangement design for flowmeter skid as per the selected type of flowmeter
- PC5.** apply relevant standard while installing flow meter depending on the type - eg - American Gas Association (AGA) report 7 for turbine flowmeter, AGA report 9 for ultrasonic flowmeter etc.
- PC6.** interpret installation requirements for auxiliary instruments as per standard
- PC7.** identify upstream and downstream header piping and pipe components as per relevant standard specifications eg- straight run requirements, flow condition etc.
- PC8.** identify material of construction (MOC) and corrosion resistance of the materials used, hot/cold insulation requirements
- PC9.** check meter body, bore, tapping, electronic housing, ports and cable entry as per relevant standard recommendations for the hazardous zone classification
- PC10.** follow Original Equipment Manufacturer (OEM) recommendations specific for the installation of flowmeter e.g.- electro-magnetic interference, skid vibration limits etc.

##### *Observing the process and diagnostic parameters*

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

- PC11.** observe the physical condition of upstream & downstream piping, pipe components, hot/cold insulation, auxiliary instruments

## Qualification Pack

- PC12.** analyse process parameters and their variation over time, sudden peak or fluctuations
- PC13.** interpret flowmeter parameters, various component status, self-diagnostics, alarms and events logging
- PC14.** analyse input sensor status, output signals and process diagnostic parameter and history trends
- PC15.** verify meter reading using meter prover system
- PC16.** perform leak test on joints, tapings, flanges, gasket etc.

*Calibration of custody meters and auxiliary instruments*

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

- PC17.** calibrate custody meter periodically as per standard requirement
- PC18.** check configuration database, calibration constant, meter dimensions, parameter constant values, time averaging and sampling rate, hysteresis, flow cut-offs etc. and record it in calibration report As-found
- PC19.** check and record line condition values on display such as flowrate, velocity, meter diagnostic parameters like gain, performance, signal to noise ratio etc.
- PC20.** undertake zero flow verification with wet or dry calibration
- PC21.** calculate error by comparing reading with reference/master flowmeter
- PC22.** implement appropriate error correction method like flow weighted mean average, second order polynomial or piecewise linearization
- PC23.** calculate calibration constants for meter configuration and prepare calibration report
- PC24.** record configuration parameters
- PC25.** calibrate auxiliary instruments like pressure & temperature transmitter, gas chromatograph etc.
- PC26.** perform auto calibration setting and configuration for gas chromatograph
- PC27.** validate calculations and constants used in flow-computer
- PC28.** trace master calibration instruments used

*Analyze and report test results*

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

- PC29.** prepare spare parts list for repairing tools and special tools
- PC30.** analyse OEM factory calibration report, factory configuration and calibration constants report.
- PC31.** facilitate third party to witness calibration report based on as-found and as-left parameter records
- PC32.** validate the calculation of flowmeter and calibration reports of Pressure Transmitter (PT), Temperature Transmitter (TT) and Gas chromatograph (GC)
- PC33.** analyse reports specific to the type of flowmeter chosen like speed of sound and test report for ultrasound meter as per AGA report 10
- PC34.** perform repeatability test results for GC
- PC35.** upgrade firmware, hardware and related parts replacement
- PC36.** maintain diagnostic software upgradation

## Knowledge and Understanding (KU)

## Qualification Pack

The individual on the job needs to know and understand:

- KU1.** companys policies on: personnel management, duty reporting procedure and associated MIS compliance
- KU2.** principles and processes for providing customer services and includes customer needs assessment, meeting quality standards for services and evaluation of customer satisfaction
- KU3.** own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities
- KU4.** reporting structure within organization and relevant people and their responsibilities within the work area
- KU5.** problem escalation procedure and escalation matrix for reporting work and employment related issues
- KU6.** standard operating procedure while working
- KU7.** relevant health and safety requirements applicable to the work place
- KU8.** importance of working in a clean and safe environment
- KU9.** documentation and related procedures applicable in the context of employment and work
- KU10.** importance and purpose of documentation in context of employment and work
- KU11.** functions of typical components on Oil & gas pipeline facilities
- KU12.** properties of hydrocarbons and basics of hydrocarbons processing
- KU13.** principles of custody transfer measurement, gas & liquid chromatograph, liquid hydrocarbon loading operation, operation of gas analysis systems including gas chromatographs, densitometers, calorimeters, typical monitoring and control systems (incl. PLC, SCADA)
- KU14.** operation of weight controllers and earthing
- KU15.** safety precautions associated with natural gas pipelines
- KU16.** performance of various pipe materials under a wide variety of conditions.
- KU17.** hazards of the trade and precautionary measures

## Generic Skills (GS)

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

- GS1.** follow written instructions
- GS2.** keep abreast by reading about new policies at an organization level
- GS3.** read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language
- GS4.** fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language
- GS5.** communicate with other team members, leaders and operations personnel in writing through appropriate method like letter, memos, email etc.
- GS6.** undertake numerical operations, geometry and calculations
- GS7.** convey and share technical information clearly using appropriate language
- GS8.** check and clarify task-related information
- GS9.** liaise with appropriate authorities using correct protocol

## Qualification Pack

- GS10.** communicate with people in respectful form and manner in line with organizational protocol
- GS11.** make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments
- GS12.** plan, prioritize and sequence work operations as per job requirements
- GS13.** organize and analyse information relevant to work
- GS14.** basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
- GS15.** deliver consistent and reliable service as per the job requirement
- GS16.** apply problem solving approaches in different situations
- GS17.** identify defects in the material and communicate it at the earliest and suggest improvements (if any) in process/material based on experience
- GS18.** apply problem-solving approaches in different situations
- GS19.** refer anomalies to the line manager
- GS20.** identify any issues affecting the material, equipment or surroundings
- GS21.** escalate issues that cannot be solved as per the troubleshooting/company manual

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Checking installation of custody meters</i>	<b>10</b>	<b>18</b>	-	-
<b>PC1.</b> identify type of custody flow meter - eg- Turbine, Ultrasonic, Coriolis and principle of their operation	1	2	-	-
<b>PC2.</b> check installation as per design considerations like maximum/minimum operating process parameters of the fluid, the general characteristics of the fluid, ambient conditions and location of skid	1	2	-	-
<b>PC3.</b> check installation as per design consideration for uni-directional or bi-directional flow	1	2	-	-
<b>PC4.</b> read general arrangement design for flowmeter skid as per the selected type of flowmeter	1	2	-	-
<b>PC5.</b> apply relevant standard while installing flow meter depending on the type - eg - American Gas Association (AGA) report 7 for turbine flowmeter, AGA report 9 for ultrasonic flowmeter etc.	1	2	-	-
<b>PC6.</b> interpret installation requirements for auxiliary instruments as per standard	1	1	-	-
<b>PC7.</b> identify upstream and downstream header piping and pipe components as per relevant standard specifications eg- straight run requirements, flow condition etc.	1	2	-	-
<b>PC8.</b> identify material of construction (MOC) and corrosion resistance of the materials used, hot/cold insulation requirements	1	1	-	-
<b>PC9.</b> check meter body, bore, tapping, electronic housing, ports and cable entry as per relevant standard recommendations for the hazardous zone classification	1	2	-	-
<b>PC10.</b> follow Original Equipment Manufacturer (OEM) recommendations specific for the installation of flowmeter e.g.- electro-magnetic interference, skid vibration limits etc.	1	2	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Observing the process and diagnostic parameters</i>	<b>6</b>	<b>11</b>	-	-
<b>PC11.</b> observe the physical condition of upstream & downstream piping, pipe components, hot/cold insulation, auxiliary instruments	1	2	-	-
<b>PC12.</b> analyse process parameters and their variation over time, sudden peak or fluctuations	1	1	-	-
<b>PC13.</b> interpret flowmeter parameters, various component status, self-diagnostics, alarms and events logging	1	2	-	-
<b>PC14.</b> analyse input sensor status, output signals and process diagnostic parameter and history trends	1	2	-	-
<b>PC15.</b> verify meter reading using meter prover system	1	2	-	-
<b>PC16.</b> perform leak test on joints, tapings, flanges, gasket etc.	1	2	-	-
<i>Calibration of custody meters and auxiliary instruments</i>	<b>12</b>	<b>22</b>	-	-
<b>PC17.</b> calibrate custody meter periodically as per standard requirement	1	2	-	-
<b>PC18.</b> check configuration database, calibration constant, meter dimensions, parameter constant values, time averaging and sampling rate, hysteresis, flow cut-offs etc. and record it in calibration report As-found	1	2	-	-
<b>PC19.</b> check and record line condition values on display such as flowrate, velocity, meter diagnostic parameters like gain, performance, signal to noise ratio etc.	1	2	-	-
<b>PC20.</b> undertake zero flow verification with wet or dry calibration	1	2	-	-
<b>PC21.</b> calculate error by comparing reading with reference/master flowmeter	1	2	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC22.</b> implement appropriate error correction method like flow weighted mean average, second order polynomial or piecewise linearization	1	2	-	-
<b>PC23.</b> calculate calibration constants for meter configuration and prepare calibration report	1	2	-	-
<b>PC24.</b> record configuration parameters	1	1	-	-
<b>PC25.</b> calibrate auxiliary instruments like pressure & temperature transmitter, gas chromatograph etc.	1	2	-	-
<b>PC26.</b> perform auto calibration setting and configuration for gas chromatograph	1	2	-	-
<b>PC27.</b> validate calculations and constants used in flow-computer	1	1	-	-
<b>PC28.</b> trace master calibration instruments used	1	2	-	-
<i>Analyze and report test results</i>	<b>7</b>	<b>14</b>	-	-
<b>PC29.</b> prepare spare parts list for repairing tools and special tools	1	2	-	-
<b>PC30.</b> analyse OEM factory calibration report, factory configuration and calibration constants report.	1	1	-	-
<b>PC31.</b> facilitate third party to witness calibration report based on as-found and as-left parameter records	1	2	-	-
<b>PC32.</b> validate the calculation of flowmeter and calibration reports of Pressure Transmitter (PT), Temperature Transmitter (TT) and Gas chromatograph (GC)	1	2	-	-
<b>PC33.</b> analyse reports specific to the type of flowmeter chosen like speed of sound and test report for ultrasound meter as per AGA report 10	1	2	-	-
<b>PC34.</b> perform repeatability test results for GC	1	1	-	-
<b>PC35.</b> upgrade firmware, hardware and related parts replacement	-	2	-	-
<b>PC36.</b> maintain diagnostic software upgradation	1	2	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>NOS Total</b>	<b>35</b>	<b>65</b>	<b>-</b>	<b>-</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N6201
<b>NOS Name</b>	Perform custody transfer metering
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Midstream
<b>Occupation</b>	Calibration & Instrumentation
<b>NSQF Level</b>	4
<b>Credits</b>	2.5
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	29/09/2023
<b>Next Review Date</b>	28/09/2026
<b>NSQC Clearance Date</b>	29/09/2023

## Qualification Pack

### HYC/N6202: Maintain & calibrate pressure Safety Valves (PSV)

#### Description

This unit covers calibration, setting, adjustment, validation of Pressure Safety Valves (PSV) by using reference standards in accordance with predetermined standard procedures. The candidate will be expected to work under minimal supervision, taking personal responsibility for own actions, and for the quality and accuracy of the work carried out

#### Scope

The scope covers the following :

- Prepare Pressure Safety Valves (PSV) for inspection, testing and calibration
- Inspection of Pressure Safety Valve (PSV)
- Testing and calibration of Pressure Safety Valves (PSV)
- Maintenance of Pressure Safety Valve (PSV) and report preparation

#### Elements and Performance Criteria

##### *Prepare Pressure Safety Valves (PSV) for inspection, testing and calibration*

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

- PC1.** obtain proper work permit from operation
- PC2.** check availability of proper non-sparking tools
- PC3.** ensure proper PPEs are used while carrying out the job
- PC4.** check proper isolation of the safety valve from the process line and communicate the status to process department
- PC5.** remove PSV from line with applicable safety permits & precautions
- PC6.** provide necessary blind after removal of PSV
- PC7.** check any hydrocarbon gas leakage by Lower Explosive Limit (LEL) meter

##### *Inspection of Pressure Safety Valve (PSV)*

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

- PC8.** shift PSV to work shop for physical internal inspection and testing
- PC9.** dismantle PSV for internal inspection
- PC10.** carry out following activities depending upon the internal inspection: (i) Lapping of disk / Nozzle(ii) Machining of disk / Nozzle(iii) Replacement of Disk / Nozzle / spring etc
- PC11.** assemble the valve back and place in test bench for testing & calibration

##### *Testing and calibration of Pressure Safety Valves (PSV)*

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

- PC12.** calibrate pressure gauges used for Calibration of PSV with secondary master test equipment.
- PC13.** fix PSV on test bench, check all connections and pressurize the system near Cold Differential Set Pressure CDSP level (as provided in data sheet)
- PC14.** test pressure safety valve for Popping at its cold differential set pressure (CDSP) value.

## Qualification Pack

- PC15.** perform satisfactory pop test, leakage/passing test as per permissible limit (normally, no passing is ensured up to 90% of set pressure).
- PC16.** paste sticker containing relevant data on PSV on acceptance of calibration
- PC17.** remove PSV from test bench after satisfaction of above testing and shift back to site for re-installation

### *Maintenance of Pressure Safety Valve (PSV) and report preparation*

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

- PC18.** remove blind from line and install back PSV with proper gasket with safety precautions, after tightening of flange bolts check leakages if any and then take back in-line
- PC19.** return the work permit to shift in-charge with confirmation from field operator
- PC20.** prepare calibration certificate
- PC21.** update calibration data in the applicable format.
- PC22.** maintain records of tests and results in accordance with procedures

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: personnel management, duty reporting procedure and associated MIS compliance
- KU2.** principles and processes for providing customer and includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction
- KU3.** own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities
- KU4.** reporting structure within organization and relevant people and their responsibilities within the work area
- KU5.** problem escalation procedure and escalation matrix for reporting work and employment related issues
- KU6.** Standard operating procedure while working
- KU7.** relevant health and safety requirements applicable in the work place
- KU8.** importance of working in a clean and safe environment
- KU9.** documentation and related procedures applicable in the context of employment and work
- KU10.** importance and purpose of documentation in context of employment and work
- KU11.** functions of typical components on Oil & gas pipeline facilities
- KU12.** properties of hydrocarbons and basics of hydrocarbons processing
- KU13.** operation of weightment controllers and earthing
- KU14.** safety precautions associated with natural gas pipelines
- KU15.** performance of various pipe materials under a wide variety of conditions.
- KU16.** hazards of the trade and precautionary measures

## Generic Skills (GS)

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

## Qualification Pack

- GS1.** follow written instructions
- GS2.** keep abreast by reading about new policies at an organization level
- GS3.** read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language
- GS4.** fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language
- GS5.** communicate with other team members, leaders and operations personnel in writing through appropriate method like letter, memos, email etc.
- GS6.** undertake numerical operations, geometry and calculations
- GS7.** convey and share technical information clearly using appropriate language
- GS8.** check and clarify task-related information
- GS9.** liaise with appropriate authorities using correct protocol
- GS10.** communicate with people in respectful form and manner in line with organizational protocol
- GS11.** make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments
- GS12.** plan, prioritize and sequence work operations as per job requirements
- GS13.** organize and analyse information relevant to work
- GS14.** basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
- GS15.** deliver consistent and reliable service as per the job requirement
- GS16.** apply problem solving approaches in different situations
- GS17.** identify defects in the material and communicate it at the earliest and suggest improvements (if any) in process/material based on experience
- GS18.** apply problem-solving approaches in different situations
- GS19.** refer anomalies to the line manager
- GS20.** identify any issues affecting the material, equipment or surroundings
- GS21.** escalate issues that cannot be solved as per the troubleshooting/company manual

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare Pressure Safety Valves (PSV) for inspection, testing and calibration</i>	<b>3</b>	<b>12</b>	-	-
<b>PC1.</b> obtain proper work permit from operation	-	2	-	-
<b>PC2.</b> check availability of proper non-sparking tools	1	1	-	-
<b>PC3.</b> ensure proper PPEs are used while carrying out the job	-	2	-	-
<b>PC4.</b> check proper isolation of the safety valve from the process line and communicate the status to process department	-	2	-	-
<b>PC5.</b> remove PSV from line with applicable safety permits & precautions	1	2	-	-
<b>PC6.</b> provide necessary blind after removal of PSV	1	1	-	-
<b>PC7.</b> check any hydrocarbon gas leakage by Lower Explosive Limit (LEL) meter	-	2	-	-
<i>Inspection of Pressure Safety Valve (PSV)</i>	<b>3</b>	<b>6</b>	-	-
<b>PC8.</b> shift PSV to work shop for physical internal inspection and testing	1	1	-	-
<b>PC9.</b> dismantle PSV for internal inspection	1	1	-	-
<b>PC10.</b> carry out following activities depending upon the internal inspection: (i) Lapping of disk / Nozzle(ii) Machining of disk / Nozzle(iii) Replacement of Disk / Nozzle / spring etc	1	2	-	-
<b>PC11.</b> assemble the valve back and place in test bench for testing & calibration	-	2	-	-
<i>Testing and calibration of Pressure Safety Valves (PSV)</i>	<b>5</b>	<b>10</b>	-	-
<b>PC12.</b> calibrate pressure gauges used for Calibration of PSV with secondary master test equipment.	1	1	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> fix PSV on test bench, check all connections and pressurize the system near Cold Differential Set Pressure CDSP level (as provided in data sheet)	1	1	-	-
<b>PC14.</b> test pressure safety valve for Poping at its cold differential set pressure (CDSP) value.	1	2	-	-
<b>PC15.</b> perform satisfactory pop test, leakage/passing test as per permissible limit (normally, no passing is ensured up to 90% of set pressure).	-	2	-	-
<b>PC16.</b> paste sticker containing relevant data on PSV on acceptance of calibration	1	2	-	-
<b>PC17.</b> remove PSV from test bench after satisfaction of above testing and shift back to site for re-installation	1	2	-	-
<i>Maintenance of Pressure Safety Valve (PSV) and report preparation</i>	<b>4</b>	<b>7</b>	-	-
<b>PC18.</b> remove blind from line and install back PSV with proper gasket with safety precautions, after tightening of flange bolts check leakages if any and then take back in-line	1	1	-	-
<b>PC19.</b> return the work permit to shift in-charge with confirmation from field operator	-	2	-	-
<b>PC20.</b> prepare calibration certificate	1	1	-	-
<b>PC21.</b> update calibration data in the applicable format.	1	2	-	-
<b>PC22.</b> maintain records of tests and results in accordance with procedures	1	1	-	-
<b>NOS Total</b>	<b>15</b>	<b>35</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N6202
<b>NOS Name</b>	Maintain & calibrate pressure Safety Valves (PSV)
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Midstream
<b>Occupation</b>	Calibration & Instrumentation
<b>NSQF Level</b>	4
<b>Credits</b>	2.5
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	29/09/2023
<b>Next Review Date</b>	28/09/2026
<b>NSQC Clearance Date</b>	29/09/2023

## Qualification Pack

### HYC/N6203: Calibrate LEL gas detector

#### Description

This unit covers calibration, setting, adjustment, validation of Lower Explosive Limit (LEL) detector by using reference standards in accordance with predetermined standard procedures. The candidate will be expected to work under minimal supervision, taking personal responsibility for own actions, and for the quality and accuracy of the work carried out.

#### Scope

The scope covers the following :

- Prepare for LEL gas detection system testing and calibration
- Perform calibration of LEL detectors
- Maintain LEL detection equipment and prepare reports

#### Elements and Performance Criteria

##### *Prepare for LEL Gas Detection System testing and calibration*

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

- PC1.** obtain proper work permit from operations team
- PC2.** check healthiness of cylinder pressure regulator and flow meter
- PC3.** check LEL cylinder gas composition and validity certificate
- PC4.** ensure PPEs are used while handling the cylinders
- PC5.** identify hazards from possible gas leakage
- PC6.** implement hazard control measures and use of appropriate personal protective equipment (PPE)

##### *Perform calibration of LEL detectors*

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

- PC7.** check LEL detector and ensure junction box is thoroughly inspected for any abnormality
- PC8.** check the following: a. 24V DC supply indicator and alarm indicator. If not, check for blown fuse or power supply from control room (Type 1)b. Head Voltage (2V DC). If required, adjust voltage from control module installed in control room (Type2)
- PC9.** purge the detector with air and observe the reading on the display unit as applicable. If required, adjust the zero reading
- PC10.** apply calibration gas, as applicable, to the detector and observe the reading on the display as per gas concentration. If required, adjust by span reading.
- PC11.** apply suitable correction factors for the intended LEL application as per OEM manual
- PC12.** repeat above steps from PC 9 to PC 11 till the readings are within required range
- PC13.** check the execution of alarm 1 (set as 20% of reading) and alarm 2 (set as 60% of reading) and adjust respective pot-meters, if required
- PC14.** take detector in line after satisfactory completion of calibration and purging

##### *Maintain LEL detection equipment and prepare reports*

## Qualification Pack

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

- PC15.** clean and maintain LEL gas detection system & testing kit in accordance with procedures and return the work permit to operation shift in-charge
- PC16.** update calibration data in the applicable format
- PC17.** maintain records of tests and results in accordance with procedures

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: personnel management, duty report in procedure and associated MIS compliance
- KU2.** principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction
- KU3.** own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities
- KU4.** reporting structure within organization and relevant people and their responsibilities within the work area
- KU5.** problem escalation procedure and escalation matrix for reporting work and employment related issues
- KU6.** Standard operating procedure while working
- KU7.** relevant health and safety requirements applicable in the work place
- KU8.** importance of working in clean and safe environment
- KU9.** documentation and related procedures applicable in the context of employment and work
- KU10.** importance and purpose of documentation in context of employment and work
- KU11.** functions of typical components on Oil & gas pipeline facilities
- KU12.** properties of hydrocarbons and basics of hydrocarbons processing
- KU13.** operation of weightment controllers and earthing
- KU14.** safety precautions associated with natural gas pipelines
- KU15.** performance of various pipe materials under a wide variety of conditions.
- KU16.** hazards of the trade and precautionary measures

## Generic Skills (GS)

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

- GS1.** follow written instructions
- GS2.** keep abreast by reading about new policies at an organization level
- GS3.** read and interpret information correctly from various job specification documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language
- GS4.** fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language

## Qualification Pack

- GS5.** communicate with other team members, leaders and operations personnel in writing through appropriate method like letter, memos, email etc.
- GS6.** undertake numerical operations, geometry and calculations
- GS7.** convey and share technical information clearly using appropriate language
- GS8.** check and clarify task-related information
- GS9.** liaise with appropriate authorities using correct protocol
- GS10.** communicate with people in respectful form and manner in line with organizational protocol
- GS11.** make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments
- GS12.** plan, prioritize and sequence work operations as per job requirements
- GS13.** organize and analyse information relevant to work
- GS14.** basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
- GS15.** deliver consistent and reliable service as per the job requirement
- GS16.** apply problem solving approaches in different situations
- GS17.** Identify defects in the material and communicate it at the earliest and suggest improvements (if any) in process/material based on experience
- GS18.** apply problem-solving approaches in different situations
- GS19.** refer anomalies to the line manager
- GS20.** identify any issues affecting the material, equipment or surroundings
- GS21.** escalate issues that cannot be solved as per the troubleshooting/company manual

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for LEL Gas Detection System testing and calibration</i>	7	9	-	-
<b>PC1.</b> obtain proper work permit from operations team	1	2	-	-
<b>PC2.</b> check healthiness of cylinder pressure regulator and flow meter	1	2	-	-
<b>PC3.</b> check LEL cylinder gas composition and validity certificate	1	1	-	-
<b>PC4.</b> ensure PPEs are used while handling the cylinders	1	2	-	-
<b>PC5.</b> identify hazards from possible gas leakage	2	1	-	-
<b>PC6.</b> implement hazard control measures and use of appropriate personal protective equipment (PPE)	1	1	-	-
<i>Perform calibration of LEL detectors</i>	10	16	-	-
<b>PC7.</b> check LEL detector and ensure junction box is thoroughly inspected for any abnormality	1	2	-	-
<b>PC8.</b> check the following: a. 24V DC supply indicator and alarm indicator. If not, check for blown fuse or power supply from control room (Type 1)b. Head Voltage (2V DC). If required, adjust voltage from control module installed in control room (Type2)	1	2	-	-
<b>PC9.</b> purge the detector with air and observe the reading on the display unit as applicable. If required, adjust the zero reading	1	2	-	-
<b>PC10.</b> apply calibration gas, as applicable, to the detector and observe the reading on the display as per gas concentration. If required, adjust by span reading.	2	2	-	-
<b>PC11.</b> apply suitable correction factors for the intended LEL application as per OEM manual	1	2	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> repeat above steps from PC 9 to PC 11 till the readings are within required range	1	2	-	-
<b>PC13.</b> check the execution of alarm 1 (set as 20% of reading) and alarm 2 (set as 60% of reading) and adjust respective pot-meters, if required	2	2	-	-
<b>PC14.</b> take detector in line after satisfactory completion of calibration and purging	1	2	-	-
<i>Maintain LEL detection equipment and prepare reports</i>	3	5	-	-
<b>PC15.</b> clean and maintain LEL gas detection system & testing kit in accordance with procedures and return the work permit to operation shift in-charge	-	1	-	-
<b>PC16.</b> update calibration data in the applicable format	2	2	-	-
<b>PC17.</b> maintain records of tests and results in accordance with procedures	1	3	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N6203
<b>NOS Name</b>	Calibrate LEL gas detector
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Midstream
<b>Occupation</b>	Calibration & Instrumentation
<b>NSQF Level</b>	4
<b>Credits</b>	2.5
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	29/09/2023
<b>Next Review Date</b>	28/09/2026
<b>NSQC Clearance Date</b>	29/09/2023

## Qualification Pack

# HYC/N6204: Carry out inspection, calibration and maintenance of instruments and control equipment in oil and gas setup

### Description

This unit is about inspection and calibration of instruments and control equipment like sensor elements, signal transmitters, controllers, indicators and alarms, actuated valves, logic circuits, hydraulic, pneumatic, electrical, and mechanical measuring and operating instruments including interfaces, etc.

### Scope

The scope covers the following :

- This unit/task covers the following:
- Inspect, evaluate, and calibrate the instruments and control equipment.
- Maintenance and calibration of instruments and control equipment
- Operate the instruments and control equipment in the oil and gas setup.
- Reporting and documentation

### Elements and Performance Criteria

#### *Inspect, evaluate, and calibrate the instruments and control equipment.*

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

**PC1.** check the steadiness of the tools and equipment used for inspection  
**PC2.** physically inspect the instruments for wear and tear or damage  
**PC3.** check the instrument for defects using testing equipment  
**PC4.** analyze the reading and compare reading with defined standards  
**PC5.** note the deviation in reading in logbook.

#### *Maintenance and calibration of instruments and control equipment*

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

**PC6.** clean the equipment to remove dirt or debris.  
**PC7.** lubricate the moving parts of the equipment.  
**PC8.** perform adjustments in the device using calibration instruments  
**PC9.** test the device to ensure the proper functioning  
**PC10.** check the readings of device with standard parameters

#### *Operate the instruments and control equipment in the oil and gas setup*

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

**PC11.** collect the instrument and equipment readiness report from maintenance department  
**PC12.** set parameters in the control equipment and instruments as per instruction  
**PC13.** monitor the reading in the instruments  
**PC14.** follow emergency procedure as per the SOP

#### *Reporting and documentation*

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

## Qualification Pack

- PC15.** report any deviations in project activities to the concerned authority
- PC16.** record all accidents and mishaps during project execution life cycle
- PC17.** conduct internal and external audit periodically and maintain record
- PC18.** maintain records of disposed and non-usuable/expired/damaged goods as per company policy

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the basic principle of Hydrocarbon products
- KU2.** company,s policies on personnel management duty, reporting procedure and associated MIS compliance
- KU3.** functions of typical components at oil & gas facilities
- KU4.** properties of hydrocarbons and basics of hydrocarbons processing
- KU5.** types of measuring Instruments and its applications and calibration methods
- KU6.** the importance of each team members irrespective of gender and personal attribute

### Generic Skills (GS)

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

- GS1.** analyze deviation in readings
- GS2.** measure and write the length of the tube for marking
- GS3.** critically evaluate the risk involved in project execution
- GS4.** communicate effectively with team members.
- GS5.** plan and organize the project operation.
- GS6.** assess complexity and criticality of task
- GS7.** critically evaluate the risk involved in project execution.

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Inspect, evaluate, and calibrate the instruments and control equipment.</i>	<b>5</b>	<b>8</b>	-	-
<b>PC1.</b> check the steadiness of the tools and equipment used for inspection	1	2	-	-
<b>PC2.</b> physically inspect the instruments for wear and tear or damage	1	1	-	-
<b>PC3.</b> check the instrument for defects using testing equipment	1	2	-	-
<b>PC4.</b> analyze the reading and compare reading with defined standards	1	1	-	-
<b>PC5.</b> note the deviation in reading in logbook.	1	2	-	-
<i>Maintenance and calibration of instruments and control equipment</i>	<b>5</b>	<b>8</b>	-	-
<b>PC6.</b> clean the equipment to remove dirt or debris.	1	2	-	-
<b>PC7.</b> lubricate the moving parts of the equipment.	1	1	-	-
<b>PC8.</b> perform adjustments in the device using calibration instruments	1	2	-	-
<b>PC9.</b> test the device to ensure the proper functioning	1	1	-	-
<b>PC10.</b> check the readings of device with standard parameters	1	2	-	-
<i>Operate the instruments and control equipment in the oil and gas setup</i>	<b>6</b>	<b>8</b>	-	-
<b>PC11.</b> collect the instrument and equipment readiness report from maintenance department	1	2	-	-
<b>PC12.</b> set parameters in the control equipment and instruments as per instruction	2	2	-	-
<b>PC13.</b> monitor the reading in the instruments	2	2	-	-
<b>PC14.</b> follow emergency procedure as per the SOP	1	2	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Reporting and documentation</i>	<b>4</b>	<b>6</b>	-	-
<b>PC15.</b> report any deviations in project activities to the concerned authority	1	2	-	-
<b>PC16.</b> record all accidents and mishaps during project execution life cycle	1	1	-	-
<b>PC17.</b> conduct internal and external audit periodically and maintain record	1	2	-	-
<b>PC18.</b> maintain records of disposed and non-usable/expired/damaged goods as per company policy	1	1	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N6204
<b>NOS Name</b>	Carry out inspection, calibration and maintenance of instruments and control equipment in oil and gas setup
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Midstream, Downstream
<b>Occupation</b>	Calibration and Instrumentation
<b>NSQF Level</b>	4
<b>Credits</b>	3.5
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	29/09/2023
<b>Next Review Date</b>	28/09/2026
<b>NSQC Clearance Date</b>	29/09/2023

## Qualification Pack

### HYC/N9301: Working Effectively in a team

#### Description

This unit is about working effectively within a team.

#### Scope

The scope covers the following :

- Effective team work

#### Elements and Performance Criteria

##### *Effective team work*

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

- PC1.** maintain clear communication with colleagues
- PC2.** pass on information to colleagues in line with organisational requirements
- PC3.** provide support to the team members
- PC4.** respect the colleagues
- PC5.** fulfil commitments made to colleagues
- PC6.** inform team members timely, if timelines can't be met
- PC7.** take the necessary initiatives to resolve the issues while working in team
- PC8.** adopt gender neutral behaviour while interacting with colleagues
- PC9.** offer assistance to a person with disability (PWD), only if required

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization policies and procedures related to team performance
- KU2.** the importance of effective communication and establishing good working relationships with colleagues
- KU3.** the importance of creating an environment of trust and mutual respect
- KU4.** the implications of own work on the work and schedule of others
- KU5.** the standard practices in organisation w.r.t communication at various levels
- KU6.** the personal responsibility for completing the task in time
- KU7.** importance of gender equality
- KU8.** importance of showing empathy while interacting with a PwD

#### Generic Skills (GS)

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

## Qualification Pack

- GS1.** communicate effectively in writing
- GS2.** read instructions, guidelines/procedures
- GS3.** work in a disciplined manner for meeting commitments and deadline
- GS4.** how to plan and prioritise the work
- GS5.** the importance of consistent and reliable services
- GS6.** apply problem solving approaches in different situations
- GS7.** apply balanced judgments to different situations

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Effective team work</i>	<b>20</b>	<b>30</b>	-	-
<b>PC1.</b> maintain clear communication with colleagues	2	3	-	-
<b>PC2.</b> pass on information to colleagues in line with organisational requirements	2	3	-	-
<b>PC3.</b> provide support to the team members	2	4	-	-
<b>PC4.</b> respect the colleagues	3	4	-	-
<b>PC5.</b> fulfil commitments made to colleagues	2	3	-	-
<b>PC6.</b> inform team members timely, if timelines can't be met	2	4	-	-
<b>PC7.</b> take the necessary initiatives to resolve the issues while working in team	3	4	-	-
<b>PC8.</b> adopt gender neutral behaviour while interacting with colleagues	2	2	-	-
<b>PC9.</b> offer assistance to a person with disability (PWD), only if required	2	3	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N9301
<b>NOS Name</b>	Working Effectively in a team
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic, Generic
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	18/02/2025
<b>Next Review Date</b>	18/02/2028
<b>NSQC Clearance Date</b>	18/02/2025

## Qualification Pack

### HYC/N9302: Maintain health, safety and security procedures

#### Description

This unit is about maintaining health, safety and security procedure at workplace. It covers responsibilities towards self, others, assets and the environment.

#### Scope

The scope covers the following :

- Follow health and safety measures
- Follow safety procedures during emergency

#### Elements and Performance Criteria

##### *Follow health and safety measures*

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

**PC1.** use protective clothing/equipment such as face mask, hand gloves, goggle etc for specific tasks and work conditions

**PC2.** identify the people responsible for maintaining health and safety in the workplace

**PC3.** identify possible causes of risk or accident in the workplace

**PC4.** follow safe working practices while dealing with hazards to ensure the safety of self and others

**PC5.** lift heavy objects safely using correct procedures

**PC6.** follow safety signages

**PC7.** maintain hands hygiene by washing hand frequently and thoroughly with soap and water or alcohol-based hand rub

**PC8.** inform the concerned person of any illness related to self and others

**PC9.** maintain workplace hygiene by disinfecting the equipment and tools regularly

##### *Follow safety procedures during emergency*

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

**PC10.** respond promptly and appropriately to an accident or in an emergency situation

**PC11.** use appropriate fire extinguishers for different types of fires correctly

**PC12.** follow appropriate rescue techniques during fire hazard

**PC13.** follow good housekeeping practice in order to prevent fire hazards

**PC14.** inform fire safety department about any near-miss incidents in the work place

**PC15.** provide appropriate first aid to victims in an emergency situation

**PC16.** follow the applicable regulations and codes as per safety standard

**PC17.** prepare written accident/incident report and share with the concerned officer/department

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

## Qualification Pack

- KU1.** company's policies on personnel management and duty reporting procedure
- KU2.** reporting structure within organization
- KU3.** health and safety hazards commonly affecting the work environment and related precautions
- KU4.** importance of maintaining personal hygiene using PPE kit, sanitizer and soap
- KU5.** importance of maintaining workplace hygiene
- KU6.** preventative and remedial actions to be taken in the case of exposure to toxic materials
- KU7.** importance of using protective clothing/equipment while working
- KU8.** various causes of fire
- KU9.** techniques of using different types of fire extinguishers
- KU10.** different materials used for extinguishing fire
- KU11.** various types of safety signs and their significance

### Generic Skills (GS)

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

- GS1.** communicate effectively by writing
- GS2.** read instructions, guidelines/procedures and reports
- GS3.** identify and report potential sources of danger
- GS4.** how to plan the work to meet the deadline
- GS5.** the importance of on time services
- GS6.** apply problem solving approaches in different situations
- GS7.** apply balanced judgments in different situations

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow health and safety measures</i>	<b>9</b>	<b>15</b>	-	-
<b>PC1.</b> use protective clothing/equipment such as face mask, hand gloves, goggle etc for specific tasks and work conditions	1	2	-	-
<b>PC2.</b> identify the people responsible for maintaining health and safety in the workplace	1	-	-	-
<b>PC3.</b> identify possible causes of risk or accident in the workplace	1	2	-	-
<b>PC4.</b> follow safe working practices while dealing with hazards to ensure the safety of self and others	1	2	-	-
<b>PC5.</b> lift heavy objects safely using correct procedures	1	2	-	-
<b>PC6.</b> follow safety signages	1	2	-	-
<b>PC7.</b> maintain hands hygiene by washing hand frequently and thoroughly with soap and water or alcohol-based hand rub	1	2	-	-
<b>PC8.</b> inform the concerned person of any illness related to self and others	1	1	-	-
<b>PC9.</b> maintain workplace hygiene by disinfecting the equipment and tools regularly	1	2	-	-
<i>Follow safety procedures during emergency</i>	<b>11</b>	<b>15</b>	-	-
<b>PC10.</b> respond promptly and appropriately to an accident or in an emergency situation	1	2	-	-
<b>PC11.</b> use appropriate fire extinguishers for different types of fires correctly	2	2	-	-
<b>PC12.</b> follow appropriate rescue techniques during fire hazard	1	2	-	-
<b>PC13.</b> follow good housekeeping practice in order to prevent fire hazards	1	1	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> inform fire safety department about any near-miss incidents in the work place	2	2	-	-
<b>PC15.</b> provide appropriate first aid to victims in an emergency situation	1	2	-	-
<b>PC16.</b> follow the applicable regulations and codes as per safety standard	1	2	-	-
<b>PC17.</b> prepare written accident/incident report and share with the concerned officer/department	2	2	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	HYC/N9302
<b>NOS Name</b>	Maintain health, safety and security procedures
<b>Sector</b>	Hydrocarbon
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic, Generic
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	18/02/2025
<b>Next Review Date</b>	18/02/2028
<b>NSQC Clearance Date</b>	18/02/2025

## Qualification Pack

### 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

## Qualification Pack

### *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

## Qualification Pack

- 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

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC2.</b> identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>1</b>	<b>3</b>	-	-
<b>PC3.</b> 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.	-	-	-	-
<i>Basic English Skills</i>	<b>2</b>	<b>3</b>	-	-
<b>PC4.</b> speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC5.</b> follow good manners while communicating with others	-	-	-	-
<b>PC6.</b> work with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>1</b>	-	-
<b>PC7.</b> communicate and behave appropriately with all genders and PWD	-	-	-	-
<b>PC8.</b> report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>3</b>	<b>4</b>	-	-
<b>PC9.</b> use various financial products and services safely and securely	-	-	-	-

## Qualification Pack

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

## Qualification Pack

### National Occupational Standards (NOS) Parameters

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

### Assessment Guidelines and Assessment Weightage

#### Assessment Guidelines

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

#### Minimum Aggregate Passing % at QP Level : 70

## Qualification Pack

**(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
HYC/N6201.Perform custody transfer metering	35	65	-	-	100	20
HYC/N6202.Maintain & calibrate pressure Safety Valves (PSV)	15	35	-	-	50	20
HYC/N6203.Calibrate LEL gas detector	20	30	-	-	50	20
HYC/N6204.Carry out inspection, calibration and maintenance of instruments and control equipment in oil and gas setup	20	30	-	-	50	15
HYC/N9301.Working Effectively in a team	20	30	-	-	50	10
HYC/N9302.Maintain health, safety and security procedures	20	30	-	-	50	10
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	5
<b>Total</b>	<b>150</b>	<b>250</b>	-	-	<b>400</b>	<b>100</b>

## Qualification Pack

### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>NOS</b>	National Occupational Standard(s)NOS
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>SS</b>	Stainless Steel
<b>PPE</b>	Personal Protective Equipment
<b>NOS</b>	National Occupational Standard(s)NOS
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
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<b>SS</b>	Stainless Steel
<b>PPE</b>	Personal Protective Equipment

## Qualification Pack

### Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.

## Qualification Pack

<b>Knowledge and Understanding (KU)</b>	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.
<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.