QUALIFICATION FILE

Process Instrument Technician (Oil & Gas)

☒ Short Term Training (STT) ☐ Long Term Training (LTT)

☐Apprenticeship

☒Upskilling ☐ Dual /Flexi Qualification ☐ For TOA

☐ General Skill ☐ Multi Skill (MS) ☐ Cross Sectorial (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 4

Submitted By:

Hydrocarbon Sector Skill Council

Chief Executive Officer

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Section 1: Basic Details

1.	**Qualification Name**	Process Instrument Technician (Oil & Gas)	
2.	**Sector/s**	Hydrocarbon	
3.	**Type of Qualification:** ☐ **New** ☒ **Revised** ☐ **Has Electives/Options** ☐**OEM**	**NQR Code & version of existing/previous qualification:** 2020/HYC/HSSCI/03769 & version 1.0	**Qualification Name of existing/previous version:** **Process Instrument Operator (Oil & Gas)**
4.	**a. OEM Name** b. **Qualification Name** (*Wherever applicable)*	**NA**	
5.	**National Qualification Register (NQR) Code & Version** (*Will be issued after NSQC approval)*	QG-04-HC-01019-2023-V2-HSSCI Version – 2.0	**6. NCrF/NSQF Level:** *4*
7.	**Award (Certificate/Diploma/Advance Diploma/ Any Other** *(Wherever applicable specify multiple entry/exits also & provide details in annexure)*	Certificate	
8.	**Brief Description of the Qualification**	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.	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	a. **Entry Qualification & Relevant Experience:**	
10.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	16	**11. Common Cost Norm Category – Category (I)**

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	Completed 2nd year of the 3-year Diploma (after 10th) in engineering trade	NA
2	10th Grade Pass plus 2-year of National Trade Certificate (NTC) in engineering trade	NA
3	12th Grade Pass (Science)	
4	11th Grade pass (Science)	1- year of relevant experience
5	10th Grade pass	2-years relevant experience
6	Previous relevant Qualification of NSQF Level 3.5	1.5-year relevant experience
7	Previous relevant Qualification of NSQF Level 3.0	3-years of relevant experience

b. Age: 18

12.	**Any Licensing requirements for Undertaking Training on This Qualification** *(wherever applicable)*	NA
13.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	**☒Offline ☐Online ☐Blended** *(Refer Blended Learning Annexure for details)*

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	111	309	60		480
Online					

14.	**Aligned to NCO/ISCO Code/s** *(if no code is available mention the same)*	NCO-2015/7311.0101
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	Vertical Progression - Level 4.5: Senior Process Instrumentation Technician Horizontal Progression – Level 4: Refinery Production Technician (O&M)
16.	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	**Hindi**
17.	**Is similar Qualification(s) available on NQR-if yes, justification for this qualification**	**☐ Yes ☒ No**
18.	**Is the Job Role Amenable to Persons with Disability**	**☐ Yes ☒ No** **If "Yes", specify applicable type of Disability:**
19.	**How Participation of Women will be Encouraged**	This job is gender neutral and focus during training should be on enrolment of women in each batch. SSC will encourage the TP and other training bodies to enrol women candidates.
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	**☒ Yes ☐ No**
21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No**
22.	**Name and Contact Details of Submitting / Awarding Body SPOC** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name: Mr. SK Bose** **Email: ceo@hsscindia.in** **Contact No.: +91 9871115360** **Website: www.hsscindia.in**

23.	**Final Approval Date by NSQC:** *29-09-2023*	**24. Validity Duration: 3-years from the date of approval**	**25. Next Review Date:** *28-09-2026*

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th.**-Theory **Pr.**-Practical OJT-On the Job **Man.**-Mandatory Training Rec.-Recommended Proj.-Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj	Viva	Total	Weightage (%)
1.	**Module 1:** Introduction to Hydrocarbon sector and the job role of Process Instrument Technician (oil and gas)	HYC/Q6201 & V 2.0	Bridge/Core	4	2.5	3	Nil	Nil	Nil	75	00	00	00	00	00	
2.	**Module 2**: Perform custody transfer metering			4		12	45	15	00		35	65	00	00	100	
3.	**Module 3**: Calibration Procedures and Reference Standards for PSVs	HYC/N6202 & V 2.0	Core	4	2.5	15	45	15	00	75	15	35	00	00	50	
4.	**Module 4**: LEL detection	HYC/N6203 & V 2.0	Core	4	2.5	15	45	15	00	75	20	30	00	00	50	
5.	**Module 5:** Carry out inspection, calibration and maintenance of instruments and control equipment in oil and gas setup	HYC/N6204 & V 1.0	Core	4	3.5	30	60	15	00	105	20	30	00	00	50	
6.	**Module 6:** Effective working in a team	HYC/N9301 & V3.0	Non- core	4	2	15	45	00	00	60	20	30	00	00	50	
7.	**Module 7:** Maintain health, safety and security procedures	HYC/N9302 & V3.0	Non-Core	4	2	15	45	00	00	60	20	30	00	00	50	
8.	**Module 8:** Employability Skills	DGT/ N0101 Version 1	Core	4	1	06	24	00	00	30	20	30	00	00	50	
Duration (in Hours) / Total Marks					16	111	309	60	00	480	150	250	00	00	400	00

Assessment - Minimum Qualifying Percentage

*Please specify **any one** of the following:*

Minimum Pass Percentage – Aggregate at qualification level: 70% *(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Diploma (Mechanical/Electrical/Chemical/Petroleum) (after class 12th) with 2-year of relevant industry experience and 1-year of academic experience
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Diploma (Mechanical/Electrical/Chemical/Petroleum) (after class 12th) with 2-year of relevant industry experience and 2-year of academic experience
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	NA

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma (Mechanical/Electrical/Chemical/Petroleum) (after class 12th) with 2-year of relevant industry experience and 1-year of academic/assessment experience
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma (Mechanical/Electrical/Chemical/Petroleum) (after class 12th) with 2-year of relevant industry experience and 1-year of academic/assessment experience
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma (Mechanical/Electrical/Chemical/Petroleum) (after class 12th) with 2-year of relevant industry experience and 2-year of academic/assessment experience
4.	**Assessment Mode** *(Specify the assessment mode)*	Both – Online and Offline
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☒ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No):** Yes
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** Yes
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes
4.	**Number of Industry validation provided:** 10 (Due to limited number of Industries available in Oil & Gas Sector; endorsed by MoPNG through Letter)

5.	**Estimated nos. of persons to be trained and employed:** The Process Instrument Technician (Oil & Gas) work in the petroleum refinery, Gas process plant, Oil & Gas Pipeline and City Gas Distribution. there were no standard training / Qualification Pack across the Oil Industry, which the work force should possess at the time of recruiting / enrolling the work force for performing the job role. This job role is identified as high priority /niche for skill development vocational training to meeting the skilled manpower requirement across the Oil & Gas Industry. National standards have been drafted that the work force in this job should possess at the time of deploying the work force on the job for performing the operations.
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** *The Ministry of Petroleum & Natural Gas (MoPNG) which is the Line Ministry for Hydrocarbon Sector has been requested to accord the concurrence*

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	**Annexure:** List of tools and equipment relevant for qualification
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	**Annexure:** Detailed Assessment Criteria
4.	**Annexure:** Assessment Strategy *(Mandatory)*	**Annexure:** Assessment Strategy
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	**Annexure:** Offline Learning Mode
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	**Annexure:** NA
7.	**Annexure:** Acronym and Glossary *(Optional)*	**Annexure:** Acronym and Glossary
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	**Supporting Document:** Model Curriculum
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	**Supporting Document:** Career Progression – Occupational Map
10.	**Supporting Document:** Occupational Map *(Mandatory)*	**Supporting Document:** Occupational Map
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	**Supporting Document:** Assessment SOP

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/ Process	The individual at Process Instrument Technician is required in all kinds of process industries including gas processing plants, oil refineries, fertilizer plants, chemical process plants, oil and gas pipelines, compressor stations etc. and assist line supervisor/Engineer to perform maintenance activities of measuring and controlling process equipment in field as well as in control room and to calibrate in accordance with approved procedures. The individual should be able to Understand the functions of oil and gas process plant/refinery & pipeline and should have clearly the basics of Engineering drawing.	The individual at this job performs the calibration and maintenance activities of electronics and electrical measuring and control equipment in hydrocarbon sector. The activities performed by individual in this job is familiar and routine in nature	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	The individual should have the knowledge of interpretation of drawing as per standard and knowledge of Geometric Dimensioning and Tolerance (GD&T) and the Knowledge of making Isometric drawing and orthographic projection. The individual required to know the usages of various types of equipment used in performing calibration. The individual must possess the knowledge and understanding of setting, adjustment, validation or verification of custody transfer metering, calibration of pressure safety valves and calibration of gas detector	For performing calibration and maintenance activities and custody transfer metering, the individual possesses the factual knowledge of calibration and instrumentation	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The individual should be able to work with planning, procedures, output and behavior and their implications also able to plan, prioritize and sequence work operations as per job requirements. The individual should must able to 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 and able to fill up appropriate technical forms, process charts, activity logs as per organizational format in English and/or local language	The individual will have the knowledge of standard operating procedure of calibration of instrument in hydrocarbon sector and able to demonstrate the procedure with respect to various calibration activities be undertaken	4
Broad Learning Outcomes/Core Skill	The individual is expected to have basic communication skills to fill appropriate forms, process charts and activity logs, etc. and understand application of basic arithmetic principles.	The individual will be able to communicate well within or outside the organization and conduct in a way, which show a basic understanding of the social and professional environment of working in workplace	4
Responsibility	The Process Instrument Technician works independently in oil and gas installation system and is majorly responsible for his own job and self-learning process	The individual is responsible for own work and learning which justifies the pegging of the QP at level 4.	4

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	Pumps and Compressors Flow meters, Pressure transmitters, Temperature sensor, Analyzers, Sampling equipment, Calibration standards, Communication devices, Safety equipment, Maintenance tools Documentation and record-keeping requirements.		
2.	Flashlight, Magnifying glass, Inspection mirror, Pressure gauges, Relief valve test bench, Simulated relief scenario setup, Reference standards, Pressure calibrators, Adjustment tools, Vernier calipers, Micrometers, Pressure transducers, Leak test equipment, Logbooks, Data sheets, Safety glasses, Gloves, Protective clothing, Compliance documents, Manuals, Guidelines, Reference books, Workshop, Ventilation.		
3.	Calibration gas, Calibration gas regulator, Calibration adapter or cap, Calibration station or kit, Screwdriver or adjustment tool, Clean air source, Personal protective equipment (PPE)		

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. White / Black board and Projector
2. Digital Presentation
3. Computer/Laptop
4. Public Addressing System

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1	IOCL	Shri Amit Gupta	DGM(HRD)		8588855975	amitgupta@indianoil.in	
2	HPCL	Shri K.Nagesh	GM - ER		9819839850	knagesh@hpcl.in	
3	ONGC	Smt. Shashi K Prasad	Group General Manager (HR)		9968282600	shashik_prasad@ongc.co.in	
4	GAIL	Dr. R.S. Velmurugan	CGM (HR)		9818866480	RS.VELMURUGAN@GAIL.CO.IN	
5	BPCL	Shri Raman Malik	GM - Admin & CSR - HRS		8939500373	malikr@bharatpetroleum.in	
6	EIL	Smt. Gopa Pradhan	CGM (HR)		9810709890	gopa.pradhan@eil.co.in	

7	OIL	Shri Ranjan Goswami	CGM (PR)		9810548249	goswamir@oilindia.in	
8	SIMULANIS	Shri Neeraj Chouhan	Chief Product Manager			neerajchouhan@simulanis.com	
9	Techshore Inspection Services	Shri NR Pillai	CEO		9846028431	Nrpillai21@gmail.com	
10	JJ ENGINEERING WORKS	Shri JEFIN T R	Managing Partner		7558088577	jjengineering2010@gmail.com	

Annexure: Training & Employment Details

Training and Employment Projections: NA

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
NA	NA	NA	NA	NA	NA	NA

Data to be provided year-wise for next 3 years

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:
Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐Theory/ Lectures - Imparting theoretical and conceptual knowledge		Offline
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		Offline
3	☐Showing Practical Demonstrations to the learners		Offline
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		Offline
5	☐Tutorials/ Assignments/ Drill/ Practice		Offline

6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations		Offline
7	☐On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		Offline

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
HYC/N6201: Perform custody transfer metering	PC1.identify type of custody flow meter - eg-Turbine, Ultrasonic, Coriolis and principle of their operation	**1**	**2**	-	-
	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.	**1**	**2**	-	-
	PC3.check installation as per design consideration for uni-directional or bi-directional flow	**1**	**2**	-	-
	PC4. read general arrangement design for flowmeter skid as per the selected type of flowmeter	**1**	**2**	-	-
	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.	**1**	**2**	-	-
	PC6.interpret installation requirements for auxiliary instruments as per standard.	**1**	**1**	-	-
	PC7.identify upstream and downstream header piping and pipe components as per relevant standard specifications eg- straight run requirements, flow condition etc.	**1**	**2**	-	-
	PC8.identify material of construction (MOC) and corrosion resistance of the materials used, hot/cold insulation requirements.	**1**	**1**	-	-
	PC9.check meter body, bore, tapping, electronic housing, ports and cable entry as per relevant standard recommendations for the hazardous zone classification	**1**	**2**	-	-
	PC10.follow Original Equipment Manufacturer (OEM) recommendations specific for the installation of flowmeter e.g.- electro-magnetic interference, skid vibration limits etc.	**1**	**2**	-	-

	PC11.observe the physical condition of upstream & downstream piping, pipe components, hot/cold insulation, auxiliary instruments	**1**	**2**	-	-
	PC12.analyse process parameters and their variation over time, sudden peak or fluctuations	**1**	**1**	-	-
	PC13.interpret flowmeter parameters, various component status, self-diagnostics, alarms and events logging	**1**	**2**	-	-
	PC14. Analyse input sensor status, output signals and process diagnostic parameter and history trends	**1**	**2**	-	-
	PC15.verify meter reading using meter prover system	**1**	**2**	-	-
	PC16.perform leak test on joints, tapings, flanges, gasket etc.	**1**	**2**	-	-
	PC17.calibrate custody meter periodically as per standard requirement	**1**	**2**	-	-
	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	**1**	**2**	-	-
	PC19.check and record line condition values on display such as flowrate, velocity, meter diagnostic parameters like gain, performance, signal t noise ratio etc.	**1**	**2**	-	-
	PC20.undertake zero flow verification with wet or dry calibration	**1**	**2**	-	-
	PC21.calculate error by comparing reading with reference/master flowmeter	**1**	**2**	-	-
	PC22. implement appropriate error correction method like flow weighted mean average, second order polynomial or piecewise linearization	**1**	**2**	-	-
	PC23.calculate calibration constants for meter configuration and prepare calibration report	**1**	**2**	-	-
	PC24.record configuration parameters	**1**	**1**	-	-
	PC25.calibrate auxiliary instruments like pressure & temperature transmitter, gas chromatograph etc.	**1**	**2**	-	-
	PC26.perform auto calibration setting and configuration for gas chromatograph	**1**	**2**	-	-

	PC27.validate calculations and constants used in flow-computer	**1**	**1**	-	-
	PC28.trace master calibration instruments used	**1**	**2**	-	-
	PC29.prepare spare parts list for repairing tools and special tools	**1**	**2**	-	-
	PC30.analyze OEM factory calibration report, factory configuration and calibration constants report.	**1**	**1**	-	-
	PC31.facilitate third party to witness calibration report based on as-found and as-left parameter records	**1**	**2**	-	-
	PC32.validate the calculation of flowmeter and calibration reports of Pressure Transmitter (PT), Temperature Transmitter (TT) and Gas chromatograph (GC)	**1**	**2**	-	-
	PC33.analyze 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**	-	-
	PC34.perform repeatability test results for GC	**1**	**1**	-	-
	PC35.upgrade firmware, hardware and related parts replacement	**-**	**2**	-	-
	PC36.maintain diagnostic software upgradation	**1**	**2**	-	-
	Total Marks	**35**	**65**	-	-
HYC/N6202: Maintain & calibrate pressure Safety Valves (PSV)	PC1 obtain proper work permit from operation.	-	2	-	-
	PC2. check availability of proper non-sparking tools	1	1	-	-
	PC3. ensure proper PPEs are used while carrying out the job.	-	2	-	-
	PC4. check proper isolation of the safety valve from the process line and communicate the status to process department.	-	2	-	-
	PC5. remove PSV from line with applicable safety permits & precautions.	1	2	-	-
	PC6. provide necessary blind after removal of PSV.	1	1	-	-
	PC7. check any hydrocarbon gas leakage by Lower Explosive Limit (LEL) meter.				

		-	2	-	-
	PC8. shift PSV to workshop for physical internal inspection and testing	1	1	-	-
	PC9. dismantle PSV for internal inspection.	1	1	-	-
	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	1	2	-	-
	PC11. assemble the valve back and place in test bench for testing & calibration	-	2	-	-
	PC12. calibrate pressure gauges used for Calibration of PSV with secondary master test equipment.	1	1	-	-
	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)	1	1	-	-
	PC14. .test pressure safety valve for Poping at its cold differential set pressure (CDSP) value.	1	2	-	-
	PC15. test pressure safety valve for Poping at its cold differential set pressure (CDSP) value.	-	2	-	-
	PC16. paste sticker containing relevant data on PSV on acceptance of calibration	1	2	-	-
	PC17. remove PSV from test bench after satisfaction of above testing and shift back to site for re- installation.	1	2	-	-
	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	1	1		
	PC19. return the work permit to shift in-charge with confirmation from field operator	-	2		
	PC20. prepare calibration certificate	1	1		
	PC21. update calibration data in the applicable format.	1	2		
	PC22. maintain records of tests and results in accordance with procedures	1	1		
	Total Marks	**15**	**35**	-	-
HYC/N6203:	PC1.obtain proper work permit from operations team	1	2	-	-

Calibrate LEL gas detector	PC2.check healthiness of cylinder pressure regulator and flow meter	1	2	-	-
	PC3.check LEL cylinder gas composition and validity certificate	1	1	-	-
	PC4.ensure PPEs are used while handling the cylinders	1	2	-	-
	PC5.Identify hazards from possible gas leakage	2	1	-	-
	PC6.implement hazard control measures and use of appropriate personal protective equipment (PPE)	1	1	-	-
	PC7.check LEL detector and ensure junction box is thoroughly inspected for any abnormality	1	2	-	-
	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)	1	2	-	-
	PC9.purge the detector with air and observe the reading on the display unit as applicable. If required, adjust the zero reading	1	2	-	-
	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.	2	2	-	-
	PC11.apply suitable correction factors for the intended LEL application as per OEM manual	1	2	-	-
	PC12.repeat above steps from PC 9 to PC 11 till the readings are within required range	1	2	-	-
	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	2	2	-	-
	PC14.take detector in line after satisfactory completion of calibration and purging	1	2	-	-
	PC15.clean and maintain LEL gas detection system & testing kit in accordance with procedures and return the work permit to operation shift in-charge.	-	1	-	-
	PC16.update calibration data in the applicable format	2	2	-	-
	PC17.maintain records of tests and results in accordance with procedures.	1	2	-	-
	Total Marks	**20**	**30**		
HYC/N6204: Carry out inspection,	PC1.check the steadiness of the tools and equipment used for inspection.	1	2	-	-

calibration and maintenance of instruments and control equipment in oil and gas setup.	PC2.physically inspect the instruments for wear and tear or damage	1	1	-	-
	PC3.check the instrument for defects using testing equipment.	1	2	-	-
	PC4.analyze the reading and compare reading with defined standards.	1	1	-	-
	PC5.note the deviation in reading in logbook.	1	2	-	-
	PC6.clean the equipment to remove dirt or debris.	1	2	-	-
	PC7.Lubricate the moving parts of the equipment.	1	1	-	-
	PC8.perform adjustments in the device using calibration instruments.	1	2	-	-
	PC9.test the device to ensure the proper functioning.	1	1	-	-
	PC10.check the readings of device with standard parameters.	1	2	-	-
	PC11.collect the instrument and equipment readiness report from maintenance department	1	2	-	-
	PC12.set parameters in the control equipment and instruments as per instruction	2	2	-	-
	PC13.monitor the reading in the instruments	2	2	-	-
	PC14.follow emergency procedure as per the SOP	1	2	-	-
	PC15.report any deviations in project activities to the concerned authority.	1	2	-	-
	PC16.record all accidents and mishaps during project execution life cycle	1	1	-	-
	PC17.conduct internal and external audit periodically and maintain record.	1	2	-	-
	PC18.Maintain records of disposed and non-usable/expired/damage goods as per company policy.	1	1	-	-
	Total Marks	**20**	**30**		
HYC/N 9301 Working effectively in a team	PC1. maintain clear communication with colleagues	**2**	3	-	-
	PC2. pass on information to colleagues in line with organizational requirements	**2**	3	-	-
	PC3. provide support to the team members	**2**	4	-	-
	PC4. respect the colleagues	**3**	4	-	-
	PC5. fulfil commitments made to colleagues	**2**	3	-	-
	PC6. inform team members timely, if timelines can't be met	**2**	4	-	-

	PC7. take the necessary initiatives to resolve the issues while working in team	**3**	4	-	-
	PC8. adopt gender neutral behavior while interacting with colleagues	**2**	2	-	-
	PC9. offer assistance to a person with disability (PWD), only if required	**2**	3	-	-
	Total Marks	**20**	**30**	-	-
HYC/N 9302 Maintain health, safety and security procedures	PC1. *use protective clothing/equipment such as face mask, hand gloves, goggle etc for specific tasks and work conditions*	1	2	-	-
	PC2. *identify the people responsible for maintaining health and safety in the workplace*	1	-	-	-
	PC3. *identify possible causes of risk or accident in the workplace*	1	2	-	-
	PC4. *follow safe working practices while dealing with hazards to ensure the safety of self and others*	**1**	2	-	-
	PC5. *lift heavy objects safely using correct procedures*	1	2	-	-
	PC6. *follow safety signages*	1	2	-	-
	PC7. *maintain hands hygiene by washing hand frequently and thoroughly with soap and water or alcohol-based hand rub*	1	2	-	-
	PC8. *inform the concerned person of any illness related to self and others*	1	2	-	-
	PC9. *maintain workplace hygiene by disinfecting the equipment and tools regularly*	1	1	-	-
	PC10. *respond promptly and appropriately to an accident or in an emergency situation*	1	2	-	-
	PC11. *use appropriate fire extinguishers for different types of fires correctly*	2	2	-	-
	PC12. *follow appropriate rescue techniques during fire hazard*	1	2	-	-
	PC13. *follow good housekeeping practice in order to prevent fire hazards*	1	1	-	-
	PC14. *inform fire safety department about any near-miss incidents in the work place*	2	2	-	-
	PC15. *provide appropriate first aid to victims in an emergency situation*	1	2	-	-
	PC16. *follow the applicable regulations and codes as per safety standard*	1	2	-	-
	PC17. *prepare written accident/incident report and share with the concerned officer/department*	2	2	-	-
	Total Marks	**20**	**30**	-	-
DGT/VSQ/N 0101 Employability Skills – NOS (30 hours)	PC1. Introduction to Employability Skills	2	0		
	PC2. Constitutional Values – Citizenship	1	1		
	PC3. Becoming a Professional in the 21st Century	1	3		
	PC4. Basic English Skills	2	3		
	PC5. Communication Skills	1	1		
	PC6. Financial and Legal Literacy	2	5		
	PC7. Essential Digital Skills	3	7		
	PC8. Diversity & Inclusion	1	1		
	PC9. Entrepreneurship	3	5		

	PC10. Customer Service	2	2		
	PC11. Getting Ready for Apprenticeship & Jobs	2	2		
	Total Marks	**20**	**30**		
Grand Total		**150**	**250**		

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:
   - Batches assigned to the assessment agencies for conducting the assessment on SIP or email
   - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
   - Assessment agency deploys the ToA certified Assessor for executing the assessment
   - HSSC monitors the assessment process & records
2. Testing Environment:
   - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
   - Check the duration of the training.
   - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
   - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
   - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
   - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
   - Check the availability of the Lab Equipment for the particular Job Role.
3. Assessment Quality Assurance levels/Framework:
   - Question bank is created by the Subject Matter Experts (SME) of Hydrocarbon Sector are verified by the Industry Experts, each performance criteria have its marks for theory based on the level of question i.e., easy, medium and difficult.
   - Questions are mapped to the specified assessment criteria
   - Assessor must be ToA certified & trainer must be ToT Certified
4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - Centre photographs with signboards and scheme specific branding
   - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
   - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:
   - Surprise visit to the assessment location
   - Random crosschecking with candidate over audio/video call or physical visit
   - Random audit of the batch
6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored
- Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

7. On the Job:

1. The evidence record of OHT will be done through organized Monitoring Reports
2. During the OJT, every trainee is required to fill the OJT monitoring report which is required to be signed by his/her supervisor and the HR of that company.
3. During assessment, each module will be assessed separately.
4. The candidate must score 60% in each module to successfully complete the OJT.
5. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:

   • Videos of Trainees during OJT
6. Assessment of each Module will ensure that the candidate is able to:

- Effective engagement with the customers
- Understand the working of various tools and equipment

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf