Oil and Gas Production Technician Skill Standards

Occupational Skills and Knowledge Definitions

1. Safe Working Practices - Knowledge of company, industry, and regulatory safe operating standards (e.g., PPE, Lockout/Tagout, electrical area classification, management of change, MSDS, environmental regulations and compliance, emergency procedures, permitting procedures, housekeeping, and labeling – color coding, HAZ-COM, DOT, National Fire Protection Agency (NFPA), process labeling).

2. Safety Systems - Knowledge of safety systems for asset and personnel protection (e.g., fire/gas detection, protection, suppression, and shutdown; process safety shutdown; emergency shutdown; emergency response system – firefighting, evacuation, audible alarms; fusible loop; flare, relief and blowdown systems), their function, the effects of bypassing them, and relevant governing agency requirements.

3. Environmental Influences - Knowledge of the environmental influences (e.g., weather, facility location – off-shore, arctic, remote; work hours) and their impact on work and home life.

4. Industry and Regulatory Standards - Knowledge of industry standards (e.g., ANSI, API, NACE) and regulatory standards (MMS, OSHA, EPA) for safe operation of equipment and facilities.

5. Environmental and Health Compliance - Knowledge of environmental (e.g., air emissions, hazardous waste, trash, recyclables, permitted/non-permitted discharge) and health (e.g., hearing, blood-borne pathogens, respiratory) regulations from federal, state, and local governing bodies, regulatory agencies, and company-specific programs and their proper reporting procedures.

6. Transportation - Knowledge of the safe transportation of people and materials to and from locations (e.g., modes of travel—planes, helicopters, boats, trucks).

7. Process/Mechanical Flow Diagrams - Knowledge of the source of pressure, temperature, and flow; the path the product will travel; methods of control; critical points of control; and destination.

8. Process Symbols - Knowledge of process symbols (e.g., valves, temperature, flow, pressure, safety devices) and their meaning as depicted on diagrams.

9. Design Parameters - Knowledge of equipment specifications (i.e., vendor data information) (e.g., valves, separators, vessels, pumps, compressors) in order to ensure in specification operations.

10. Well Design - Knowledge of individual components (e.g., packers, tubing, tubing hanger, valves, safety systems, choke, artificial lift systems) and their functions.

11. Oil and Gas Processing and Equipment - Knowledge of oil and gas processing (e.g., twophased and three-phased separation; gas, oil, and water conditioning—dehydration, H2S and CO2 removal, heater/treater, chem-electric treater, skimmers, flotation cells, filtration) and the equipment used (i.e., internal/external vessel design).

12. Gas Compression Systems - Knowledge of gas compression system components (e.g., compressor, drivers, lube/oil systems, vibration detection, seals, surge and recycle control) and their function (e.g., hazards associated with liquid production and hydrate formation).

13. Heat Exchange - Knowledge of heat exchange types (e.g., direct fire, electric, shell/tube, WHRU—waste heat recovery unit, boilers, steam generators) their function, and the associated hazards (e.g., temperature extremes, leaks, open flame, equipment used, fluid handling).

14. Secondary Recovery - Knowledge of fundamentals of secondary recovery of process fluids and performance optimization (e.g., artificial lift—water flood, submersible and surface pumps, gas lift).

15. Troubleshooting - Analyze process indicators and operating parameters for in/out specification, and then identify the proper course of action to resolve the problem.

16. Operation Monitoring - Read instrumentation locally (e.g., gauges, flow rates, temperatures), and remotely such as DCS (distributed control systems) and SCADA (supervisory control and data acquisition), manipulate the data (e.g., trending, editing, compiling) and document data for analysis.

17. Oil and Gas Well Production - Knowledge of oil and gas well production (e.g., flowing/tubing pressures, temperatures, reservoir makeup) and the effects of the product produced (e.g., hydrocarbon chemical properties, hydrate formation, and temperature issues).

18. Oil and Gas Chemical Treatment - Knowledge of basic oil/gas chemical treatment (e.g., demulsifiers, defoamers, scale inhibitors, corrosion inhibitors, hydrate inhibitors) and their effects (e.g., loss of chemical treatment, overtreatment, undertreatment, compatibility).

19. Operation Control - Knowledge of control functions (e.g., level, pressure, flow, temperature), devices, safety control and control logic, as well as their cause and effects on the facility.

20. Metering and Allocation - Knowledge of metering and allocation fundamentals (e.g., Lease Accounting Custody Transfer (LACT) unit, American Gas Association (AGA) meters, allocation back to specific wells, calibrations, and proving) to ensure all stakeholders receive their designated share.

21. Sampling - Knowledge of safe collection of process fluids (e.g., oil, gas, water) while considering such things as PPE, tools and equipment, ventilation, collection point, and testing on site or sending to designated site as required.

22. Testing Procedures - Knowledge of safe testing procedures (e.g., PSVs, high/low levels, high/low pressures) in accordance with manufacturer instructions, regulations, and local procedures.

23. Fuel Gas - Knowledge of fuel gas components (e.g., scrubbers, filter, heat exchanger, fuel valves) its function and use.

24. Electrical Power Sources - Knowledge of main power source (e.g., electrical power generation, utility power, batteries, turbines) their backup power sources (e.g., standby generator, UPS) and their function.

25. Utility Systems - Knowledge of utility systems (e.g., pneumatic—instrument air, utility air; hydraulics; high- and low- pressure nitrogen; water systems—ionized, potable, non-potable, fire, produced, utility) their appropriate uses and proper disposal.

26. Overhead Lifting Devices - Knowledge of overhead lifting devices (e.g., cranes, wenches, forklift, hoist, manlift) and their safe operation.

27. Record Keeping - Maintain proper records (e.g., production volume, well-test reports, safety system testing, U.S. Coast Guard reports, flare and vented gas reports) and retain them for the designated time period (i.e., record retention schedule or regulatory agency requirements).

28. Material Handling - Knowledge of material handling (e.g., ordering, receiving, shipping, storing, inventory).

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Critical Work Function	Key Activity	Key Activity	Key Activity	Key Activity	Key Activity
1. Maintain Wellhead System	1.1 Monitor and regulate wellhead process variables	1.2 Operate manual wellhead valves	1.3 Test wellhead pneumatic/hydraulic valves	1.4 Monitor and regulate well production	1.5 Perform reservoir maintenance
2. Maintain Separation System	2.1 Monitor and regulate separation process variables	2.2 Adjust or repair separation system safety devices	2.3 Set separation system operating range	2.4 Operate header system	
3. Maintain Compression System	3.1 Monitor and regulate compressor process variables	3.2 Adjust or repair compressor safety devices			
4. Maintain Dehydration System	4.1 Monitor and regulate dehydration system variables	4.2 Adjust or repair dehydration system safety devices			
5. Maintain Oil Treatment System	5.1 Monitor and regulate oil treatment system process variables	5.2 Adjust or repair oil treatment safety devices	5.3 Monitor and regulate oil recovery		
6. Maintain Water Treatment System	6.1 Monitor and regulate water treatment process variables	6.2 Adjust or repair water treatment safety devices	6.3 Test produced/collected water		
7. Control Shut-In	7.1 Shut down facility in normal mode	7.2 Shut down facility in emergency mode	7.3 Start up facility after normal shut down	7.4 Start up facility after emergency shut down	
8. Comply with Policies and Procedures	8.1 Comply with external regulations	8.2 Comply with internal regulations	8.3 Perform administrative functions	8.4 Conduct routine maintenance	
9. Monitor Electrical Systems	9.1 Monitor generator equipment variables	9.2 Monitor primary and back-up power sources			
10. Maintain Auxiliary Systems	10.1 Monitor and regulate flare scrubber variables	10.2 Adjust or repair safety devices	10.3 Monitor and regulate fuel gas scrubber variables	10.4 Operate Crane	10.5 Monitor and regulate instrument air supply to pneumatic panel

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 1. Maintain Wellhead System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
1.1 Monitor and regulate wellhead process variables	1.1.1 Flow meets product/equipment specifications. 1.1.2 Pressure meets product/equipment specifications. 1.1.3 Temperature meets product/equipment specifications. 1.1.4 Pressure gauges/transducers are accurate according to operations manuals supplied by manufacturers. 1.1.5 Testing requirement schedules are maintained according to product/equipment specifications. 1.1.6 Component /system design tolerances meet requirements of the lease agreement, company rules and regulations, and governmental agencies work practices. 1.1.7 Hazard containment analysis is conducted for upstream and downstream effects of process/component function/system variables. 1.1.8 Chemicals are applied/injected according to manufacturer and engineering specifications. 1.1.9 Abnormal conditions in wellhead pressure safety high/pressure safety low valves are corrected and components are returned to service according to company policies and procedures. 1.1.10 Visible leaks and auditory leak evidence detected in wellhead system during rounds are repaired according to company specifications.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Process/Mechanical Flow Diagrams Well Design Operation Monitoring Oil and Gas Well Production Oil and Gas Chemical Treatment Record Keeping Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 1. Maintain Wellhead System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
1.2 Operate manual wellhead valves	1.2.1 Valve opens with ease according to manufacturer and company specifications. 1.2.2 Valve closes with ease according to manufacturer and company specifications. 1.2.3 Pressure is bled off to meet manufacturer and company specifications using an approved valve bleed tool when servicing the valve. 1.2.4 Safe work practices are followed when opening, closing, greasing, and maintaining valves according to manufacturer and company specifications. 1.2.5 Valve is fully opened or fully closed to avoid erosion of gates according to manufacturer and company specifications.	Safe Working Practices Safety Systems Process/Mechanical Flow Diagrams Operation Monitoring Oil and Gas Well Production Operation Control Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 1. Maintain Wellhead System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
1.3 Test wellhead pneumatic or hydraulic valves	1.3.1 Surface safety valve closing time meets appropriate regulatory agency requirements. 1.3.2 Surface safety valve holding test is within appropriate regulatory agency limits. 1.3.3 Surface-controlled sub-surface safety valve timing is within appropriate regulatory agency requirements. 1.3.4 Surface-controlled sub-surface safety valve timing is within appropriate regulatory agency requirements. 1.3.5 Timing circuit meets appropriate regulatory agency requirements. 1.3.6 Flow safety valve holding test is within appropriate regulatory agency requirements when pressure is bled off and it prevents backflow. 1.3.7 Shut down valve functions according to appropriate regulatory agency specifications.	Safety Systems Industry and Regulatory Standards Design Parameters Well Design Operation Control Testing Procedures Record Keeping Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 1. Maintain Wellhead System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
1.4 Monitor and regulate well production	1.4.1 Well flow rate test meets appropriate regulatory agency specifications. 1.4.2 Wellhead sampling (gas, well fluids, sand, oil, water) is within safe operational parameters according to defined company standards. 1.4.3 Wellhead sampling on artificially lifted well is within safe operational parameters according to defined company standards. 1.4.4 Flow tubing pressure is within normal limits according to flow rate samples. 1.4.5 Flow rate abnormalities are isolated according to appropriate regulatory agency requirements to assure that safe operational parameters are maintained. 1.4.6 Each well is tested for production rates according to appropriate regulatory agency regulations. 1.4.7 Nodal analysis is conducted to minimize flow restriction due to overuse of flow tees, elbows and pipe bends according to defined company standards.	Safe Working Practices Environmental Influences Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Well Design Oil and Gas Processing and Equipment Operation Monitoring Oil and Gas Well Production Operation Control Metering and Allocation Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 1. Maintain Wellhead System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
1.5 Perform reservoir maintenance	1.5.1 Testing and sampling are within established appropriate regulatory agency parameters. 1.5.2 Injection pressures and rates are consistent and meet established company parameters for maximum production. 1.5.3 Flow rates are consistent and meet company parameters. Rates are determined through the results of well testing. 1.5.4 Artificial lift systems are maintained according to established company engineering parameters. 1.5.5 Flow line fluid samples are checked as specified by company standards to detect basic sediment and water, sand production, corrosion, paraffin, scale, etc. 1.5.6 Chemicals are applied/injected according to manufacturer and company specifications. 1.5.7 Oil gravities are checked at each well test according to company specifications. 1.5.8 Gas gravities are checked monthly for CO2, H2S, etc., according to customer and company specifications. 1.5.9 Abnormalities including the presence of sand and erosion are reported according to company operating and safety specifications. 1.5.10 Casing annuli are monitored monthly for sustained casing pressure according to appropriate agency regulations.	Safe Working Practices Process/Mechanical Flow Diagrams Well Design	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 1: Maintain Wellhead System

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 1 Maintain Wellhead System																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	4	4	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 1

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:
(1)Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed
(2)Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices
(3)Preparation and justification of a reasonable solution to a problem scenario

B.Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:
(1)Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2)Apply relevant knowledge or skills.
(3)Focus on the application of knowledge and skills to a new situation.
(4)Demonstrate an ability to plan, organize and create a product or an event.
(5)Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 2. Maintain Separation System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
2.1 Monitor and regulate separation process variables	2.1.1 Flow meets product/equipment specifications. 2.1.2 Pressure meets product/equipment specifications. 2.1.3 Temperature meets product/equipment specifications. 2.1.4 Separator system is inspected to detect leaks according to company specifications. 2.1.5 Pressure/ level controllers are operating according to appropriate agency regulations and equipment specifications. 2.1.6 Pressure/level controller set points are established according to appropriate agency regulations and equipment specifications. 2.1.7 Gauges, transmitters, transducers, and sight glasses are checked for accuracy according to product/equipment specifications. 2.1.8 System backpressure is maintained at the lowest setting possible. 2.1.9 Heater treater is operating according to pipeline specifications. 2.1.10 Abnormal conditions in separator components are corrected and components are returned to service according to appropriate agency regulations. 2.1.11 Chemicals are applied/injected according to company specifications.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Gas Compression Systems Heat Exchange Troubleshooting Operation Monitoring Oil and Gas Well Production Oil and Gas Chemical Treatment Operation Control Metering and Allocation Sampling Testing Procedures Record Keeping Ability to strap a tank, color cut, operate a thief Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 2. Maintain Separation System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
2.2 Adjust or repair separation system safety devices	2.2.1 Level safety high/level safety low and shut down valve are set according to operating conditions to avoid upset condition upstream or downstream of vessel. 2.2.2 Pressure safety high/low sensors are set according to operating conditions and appropriate agency requirements to avoid upset conditions upstream or downstream of vessel. 2.2.3 Testing of all safety devices is recorded on the test report. 2.2.4 Set points on pressure safety high/low sensors are within appropriate regulatory agency specifications. 2.2.5 Range chart used to determine the set pressures is on file and checked to verify settings anytime there is a change in operating conditions per appropriate regulatory agency regulations. 2.2.6 Pressure safety valve is in service and relief pressure is set according to specifications and appropriate regulatory agency requirements 2.1.7 Flow safety valves are functioning according to equipment pressure ratings for specific facility. 2.1.8 Changes to the safety devices are recorded in the support documentation according to manufacturer and company specifications.	Safe Working Practices Safety Systems Industry and Regulatory Standards Process/Mechanical Flow Diagrams Process Symbols Design Parameters Oil and Gas Processing and Equipment Oil and Gas Well Production Operation Control Testing Procedures Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 2. Maintain Separation System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
2.3 Set separation system operating range	2.3.1 Level safety high/low alarms sound during testing at the correct level as determined by company and equipment specifications. 2.3.2 Safety devices are tested according to appropriate regulatory agency procedures. 2.3.3 Pressure safety high/low alarms sound during testing at the correct pressure as specified by appropriate regulatory agency procedures. 2.3.4 Pressure/level controllers are observed for operating condition according to company and equipment specifications. 2.3.5 Pressure/level controller set points are established according to equipment specifications. 2.3.6 Pressure safety high/low sensor set point is within appropriate regulatory agency requirements. 2.3.7 Pressure safety high/low sensors are tested according to appropriate regulatory agency procedures.	Safety Systems Industry and Regulatory Standards Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Operation Monitoring Operation Control Ability to identify and break a line freeze	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 2. Maintain Separation System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
2.4 Operate header system	2.4.1 Well fluid is directed to correct header as specified by the operating conditions. 2.4.2 Well pressure mode is selected for test separator operation according to operating conditions and company specifications. 2.4.3 Test separator is in the same mode as the well pressure mode according to operating conditions and company specifications. 2.4.4 Backpressure valve on the test system is adjusted according to the type well in the test system and company specifications.	Safe Working Practices Safety Systems Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Operation Monitoring Oil and Gas Well Production Operation Control Ability to strap a tank, color cut, operate a thief	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 2: Maintain Separation System
On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 2																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	4	4	3	3	3	3	3	3	2	2	3	2	3	3	2	3

Statement of Assessment for Critical Work Function 2:

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:
(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:
(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 3. Maintain Compression System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
3.1 Monitor and regulate compressor process variables	3.1.1 Suction pressure, interstage pressure, and discharge gauges are within product/equipment specifications. 3.1.2 Levels on scrubber (sight glass) are within product/equipment specifications. 3.1.3 Pressure/level controllers are operating within equipment specifications. 3.1.4 Pressure/level controller set points are established within equipment specifications. 3.1.5 Temperature, oil pressure, vacuum pressure, and speed of engine (gauges) are within product/equipment specifications. 3.1.6 Compressor oil pressure and lubricator flow rate are within production/equipment specifications. 3.1.7 Compressor temperature stages are within product/equipment specifications. 3.1.8 Cooler temperature is within product/equipment specifications. 3.1.9 Oil levels of the engine, compressor, and supply (day) tanks are adequate according to production/equipment specifications. 3.1.10 Level of the coolant, (day) tanks and equipment are adequate according to production/equipment specifications. 3.1.11 Specified guards and insulation are in place to protect personnel from contact with hot surfaces according to appropriate regulatory agency specifications. 3.1.12 Signs are in place warning personnel of high noise levels according to appropriate regulatory agency specifications. 3.1.13 Vibration switches are in place and activate to avoid damage to equipment as specified in equipment parameters. 3.1.14 Visible leaks and auditory leak evidence detected in compressor system during rounds are repaired according to company specifications. 3.1.15 Abnormal conditions in compressor components are corrected and components are returned to service according to appropriate agency regulations.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Gas Compression Systems Troubleshooting Operation Monitoring Operation Control Fuel Gas Metering and Allocation Ability to read a section line map Knowledge of pigging techniques Ability to identify and break a line freeze Ability to carry out routine blowdown and/or purge steps appropriate to condition Ability to change hot valves and plugs	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 3. Maintain Compression System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
3.2 Adjust or repair compressor safety devices	3.2.1 Level safety high/low sensors and shut down valve sensors are within safe operational parameters according to appropriate regulatory agency and equipment manufacturer specifications. 3.2.2 Pressure safety high/low sensors are within safe operational parameters according to appropriate regulatory agency and equipment manufacturer specifications. 3.2.3 Set point on pressure safety high/low sensors are within appropriate regulatory agency specifications. 3.2.4 Flow safety valves are installed according to product, manufacturer, and company specifications. 3.2.5 Blow down valve operates as needed according to appropriate regulatory agency and equipment manufacturer specifications. 3.2.6 Compressor safety devices are tested and maintained as required by appropriate regulatory agency and company specifications.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Gas Compression Systems Troubleshooting Operation Control Testing Procedures Ability to read a section line map Knowledge of pigging techniques Ability to identify and break a line freeze Ability to carry out routine blowdown and/or purge steps appropriate to condition Ability to change hot valves and plugs	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 3:

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 3																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	4	4	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 3:

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:
(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:
(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 4. Maintain Dehydration System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
4.1 Monitor and regulate dehydration system variables	4.1.1 Incoming pump pressure is within product/equipment specifications. 4.1.2 Outgoing pump pressure is within product/equipment specifications. 4.1.3 Condensate separator pressure, level and temperature readings are within product/equipment specifications. 4.1.4 Surge tank pressure, level and temperature readings are within product/equipment specifications. 4.1.5 Reboiler tank pressure, level and temperature readings are within product/equipment specifications. 4.1.6 Set points on dehydration system are within appropriate regulatory agency specifications. 4.1.7 Pump stroke rate is within product/equipment specifications. 4.1.8 Contact tower pressure, level and temperature readings are within product/equipment specifications. 4.1.9 Visible leaks and auditory leak evidence detected in dehydration system during rounds are repaired according to company specifications. 4.1.10 Periodic sampling of dehydrated gas indicates that it is within limits set by customer/consumer. 4.1.11 Periodic sampling of lean and rich glycol samples indicates system is performing within parameters established by company specifications. 4.1.12 Filter differential pressures are monitored and filters are changed according to company specifications. 4.1.13 Abnormal conditions in dehydration system are corrected and components are returned to service according to the appropriate agency regulations and American Petroleum Institute (API) specifications.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Heat Exchange Troubleshooting Operation Monitoring Operation Control Metering and Allocation Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 4. Maintain Dehydration System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
4.2 Adjust or repair dehydration system safety devices	4.2.1 Level safety high/low sensors and shut down valve are set according to operating conditions upstream and downstream of vessel. 4.2.2 Pressure safety high/low sensors are set according to operating conditions and appropriate regulatory agency specifications. 4.2.3 Pressure safety low on the forced air chamber is within safe operational parameters according to equipment manufacturer specifications. 4.2.4 Fuel gas system pressure safety high/low, level safety high/low and PSV are within safe operational parameters and appropriate regulatory agency specifications. 4.2.5 Set point on pressure safety high/low sensors are within appropriate regulatory agency specifications and within safe operational parameters according to equipment manufacturer specifications. 4.2.6 Temperature safety high setpoint in a heat exchange system located on the stack of the heat media is within appropriate regulatory agency specifications. 4.2.7 Abnormal conditions in the blower motor are corrected and components are returned to service according to the appropriate regulatory agency specifications and API recommended practices. 4.2.8 Abnormal conditions in the fuel gas burner are corrected and components are returned to service according to the appropriate regulatory agency specifications and API recommended practices. 4.2.9 Exhaust burner stack arrestor (natural or forced draft) functions according to appropriate regulatory agency specifications. 4.2.10 Temperature safety high on the exhaust of the burner of a direct heated (natural or forced draft) functions according to appropriate regulatory agency specifications. 4.2.11 Reboiler and surge tank's PSV, LSH/L, TSH, PSH/L, and the FSVs function according to appropriate regulatory agency specifications. 4.2.12 Heat exchanger pressure and temperature ratings are reviewed for safety devices required according to appropriate regulatory agency specifications. 4.2.13 Equipment is protected by Temperature Safety Elements according to appropriate regulatory agency requirements and API recommended practices.	Safe Working Practices Safety Systems Industry and Regulatory Standards Process/Mechanical Flow Diagrams Process Symbols Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 4: Maintain Dehydration system

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 4																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
4	3	2	2	4	3	3	4	4	3	2	3	3	3	4	2	3

Statement of Assessment for Critical Work Function 4:

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:
(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:
(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 5. Maintain Oil Treatment system		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
5.1 Monitor and regulate oil treatment system process variables	5.1.1 Heater/treater pressure, level and temperature readings are within product/equipment specifications. 5.1.2 Outgoing percentage of basic sediment and water meets buyer specifications. 5.1.3 Chemical injection rates meet production rate specifications. 5.1.4 Backpressure valve is functioning within product/equipment specifications. 5.1.5 Pressure/level controllers are operating within equipment specifications. 5.1.6 Pressure/level controller set points are established according to operating conditions and equipment specifications. 5.1.7 Primary and backup protection devices are within safe operating parameters as determined by appropriate standards. 5.1.8 Visible leaks and auditory leak evidence detected in oil treatment system during rounds are repaired according to appropriate regulatory agency and company specifications. 5.1.9 Abnormal conditions in the oil treatment system are corrected and components are returned to service according to appropriate regulatory agency regulations and API recommended practices.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Process Symbols Design Parameters Oil and Gas Processing and Equipment Heat Exchange Troubleshooting Operation Monitoring Oil and Gas Well Production Oil and Gas Chemical Treatment Operation Control Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 5. Maintain Oil Treatment system		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
5.2 Adjust or repair oil treatment safety devices	5.2.1 Level safety high/low sensors and shut down valves are set according to operating conditions and appropriate regulatory agency requirements. 5.2.2 Pressure safety high/low sensors are set according to operating conditions and appropriate regulatory agency requirements. 5.2.3 Set point on pressure safety high/low sensors are within appropriate regulatory agency specifications. 5.2.4 Primary and backup protection devices are within safe operating parameters as determined by appropriate standards.	Safe Working Practices Safety Systems Industry and Regulatory Standards Process/Mechanical Flow Diagrams Process Symbols Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 5. Maintain Oil Treatment system		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
5.3 Monitor and regulate oil recovery	5.3.1 Oil recovery system is at operating pressure according to appropriate regulatory agency and company specifications. 5.3.2 Lease Automatic Custody Transfer is maintained according to appropriate regulatory agency specifications. 5.3.3 LACT is proven monthly according to appropriate regulatory agency specifications. 5.3.4 Abnormal conditions in oil recovery system are corrected and components are returned to service according to the appropriate regulatory agency regulations and API recommended practices. 5.3.5 Pigs keep pipeline clean according to company specifications. 5.3.6 Fire fighting system is maintained according to appropriate regulatory agency specifications.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Well Design Oil and Gas Processing and Equipment Secondary Recovery Troubleshooting Operation Monitoring Oil and Gas Well Production Oil and Gas Chemical Treatment Operation Control Metering and Allocation Sampling Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 5: Maintain Oil Treatment System

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 5																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	3	4	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 5: Maintain Oil Treatment System

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:
(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:
(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 6. Maintain Water Treatment System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
6.1 Monitor and regulate treatment process variables	6.1.1 Skimmer pressure, level and temperature readings are within product/equipment specifications. 6.1.2 Chemical injection rates meet production rate specifications. 6.1.3 Visible leaks and auditory leak evidence detected in water treatment system during rounds are repaired according to company specifications. 6.1.4 Pressure/level controllers are operational and set points are established according to operating conditions and company specifications. 6.1.5 Abnormal conditions in water treatment system are corrected and components are returned to service according to appropriate regulatory agency regulations and API recommended practices.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Sampling Record Keeping Metering and Allocation	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 6. Maintain Water Treatment System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
6.2 Adjust or repair water treatment safety devices	6.2.1 Level safety high/low sensors and shut down valves are set according to operating conditions and appropriate regulatory agency requirements. 6.2.2 Pressure safety high/low sensors are set according to operating conditions and appropriate regulatory agency requirements. 6.2.3 Set point on pressure safety high/low sensors are within appropriate regulatory agency specifications. 6.2.4 Primary and backup protection devices are within safe operating parameters as determined by appropriate standards.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 6. Maintain Water Treatment System		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
6.3 Test produced/collected water	6.3.1 Testing and sampling of hydrocarbon ppm in overboard water is within limits set by appropriate regulatory agency. 6.3.2 Testing and sampling of process water are within established appropriate regulatory agency parameters. 6.3.3 Testing and sampling of potable water, boiler feed water, service water and fire water are within established company specifications. 6.3.4 Testing and sampling of storm water are within established appropriate regulatory agency parameters. 6.3.5 Testing and sampling of waste water are within established appropriate regulatory agency parameters.	Safe Working Practices Environmental and Health Compliance Oil and Gas Chemical Treatment Sampling Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 6: Maintain Water Treatment System

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 6 Maintain Water Treatment System																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	4	4	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 6

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:

(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:

(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 7 Control Shut-in		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
7.1 Shut down facility in normal mode	7.1.1 Manual wing valve is closed on all wells as specified by company procedures. 7.1.2 Automated and adjustable chokes on the wellhead are closed, stopping flow according to company specifications. 7.1.3 Compressors and pumps are shut down according to company specifications. 7.1.4 Lockout/Tagout is performed according to company specifications. 7.1.5 Backup power source is started according to company specifications. 7.1.6 System is depressurized following company procedures. 7.1.7 Inlet valves to vessels are closed according to company specifications.	Safe Working Practices Safety systems Process/Mechanical Flow diagrams Design Parameters Oil and Gas Processing and Equipment Operation Monitoring Operation Control Record Keeping Ability to read a section line map Ability to carry out routine blowdown and/or purge steps appropriate to condition	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 7 Control Shut-in		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
7.2 Shut down facility in emergency mode	7.2.1 Emergency shut down system activates within 45 seconds as specified by appropriate regulatory agency requirements and company procedures. 7.2.2 Inlet shut down valves are closed according to appropriate regulatory agency requirements and company specifications. 7.2.3 Manual wing valve is closed on all wells according to company specifications. 7.2.4 Automated and adjustable chokes on the wellhead are closed, stopping flow according to company specifications. 7.2.5 Compressors and pumps are shut down automatically according to company specifications. 7.2.6 Lockout/Tagout is performed according to company procedures. 7.2.7 Backup power source is started according to company specifications. 7.2.8 Inlet valves to vessels are closed according to company specifications. 7.2.9 System is bled down through the flare system according to company specifications. 7.2.10 Pressure gauges read “0” pressure as specified by company procedures.	Safe Working Practices Safety systems Environmental and Health Compliance Process/Mechanical Flow diagrams Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Record Keeping Ability to read a section line map Ability to carry out routine blowdown and/or purge steps appropriate to condition	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 7 Control Shut-in		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
7.3 Start up facility after normal shut down	7.3.1 Tripped safety systems are flagged, bypassed and monitored during start-up of facility according to appropriate regulatory agency requirements and company procedures. 7.3.2 Inlet shut down valves are reset and open according to company specifications. 7.3.3 Lockout/Tagout is removed according to company procedures. 7.3.4 Chokes on wells are opened according to company specifications. 7.3.5 Warmed compressor is loaded after reaching established temperature according to company procedures. 7.3.6 Flow is established according to documented pre-shut down rate according to company specifications. 7.3.7 Process variables on all process components are within operational parameters of product/equipment and company specifications. 7.3.8 Chemical systems are started according to company specifications. 7.3.9 Bypassed safety devices are returned to service following appropriate regulatory agency requirements and company procedures	Safe Working Practices Safety systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow diagrams Design Parameters Oil and Gas Processing and Equipment Operation Monitoring Oil and Gas Well Production Operation Control Utility Systems Record Keeping Ability to read a section line map Ability to carry out routine blowdown and/or purge steps appropriate to condition	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 7 Control Shut-in		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
7.4 Start up facility after emergency shut down	7.4.1 Cause of emergency shut-down is addressed and corrected according to company specifications. 7.4.2 Tripped safety systems are flagged, bypassed and monitored during start-up of facility according to appropriate regulatory agency requirements and company procedures. 7.4.3 Inlet shut down valves are reset and open according to company specifications. 7.4.4 Chokes on wells are opened according to company specifications. 7.4.5 Warmed compressor is loaded after reaching established temperature according to company procedures. 7.4.6 Flow is established according to documented pre-shut down rate. 7.4.7 Process variables on all process components are within operational parameters of product/equipment. 7.4.8 Chemical systems are started according to company specifications. 7.4.9 All bypassed safety devices are returned to service following appropriate regulatory agency requirements and company procedures.	Safe Working Practices Safety systems Environmental and Health Compliance Process/Mechanical Flow diagrams Design Parameters Oil and Gas Processing and Equipment Operation Monitoring Operation Control Ability to read a section line map Ability to carry out routine blowdown and/or purge steps appropriate to condition	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 7: Control Shut-in

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 7 Control Shut-in																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
4	3	4	4	4	4	4	3	3	2	2	2	3	3	3	2	3

Statement of Assessment for Critical Work Function 7

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:

(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:

(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 8. Comply with Policies and Procedures		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
8.1 Comply with external regulations	8.1.1 Completion of MMS routine inspections is documented according to company procedures. 8.1.2 Completion of US Coast Guard routine inspections is documented according to company procedures. 8.1.3 Completion of API routine inspections is documented according to company procedures. 8.1.4 Completion of US Department of Transportation (DOT) routine inspections is documented according to company procedures. 8.1.5 Completion of OSHA routine inspections is documented according to company procedures. 8.1.6 Completion of EPA routine inspections is documented for water discharged from offshore facilities. 8.1.7 Completion of state environmental routine inspections is documented for water discharged from offshore facilities.	Safe Working Practices Industry and Regulatory Standards Environmental and Health Compliance Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 8. Comply with Policies and Procedures		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
8.2 Comply with internal requirements	8.2.1 Monthly calibration of monitoring devices is completed and documented according to appropriate regulatory agency and company specifications. 8.2.2 Waste to shore is measured and recorded according to appropriate regulatory agency and company specifications. 8.2.3 Daily pollution survey is completed and documented according to appropriate regulatory agency and company specifications. 8.2.4 Incident reports are filled out according to appropriate regulatory agency and company specifications 8.2.5 Daily report is completed and filed according to company specifications. 8.2.6 Work orders are filled out according to company specifications. 8.2.7 Morning reports are competed and filed daily according to company specifications. 8.2.8 Helicopter routines are documented according to company specifications. 8.2.9 Safety routines are completed and documented according to company specifications.	Safe Working Practices Safety systems Industry and Regulatory Standards Environmental and Health Compliance Metering and Allocation Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 8. Comply with Policies and Procedures		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
8.3 Perform administrative functions	8.3.1 Payroll and budgets are within company/customer allocation. 8.3.2 Inventories of supplies, materials and equipment are consistent with company/agency requirements. 8.3.3 Inter/Intra platform communications follow company/agency procedures. 8.3.4 Drills are conducted according to company procedures.	Record Keeping Material Handling	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 8. Comply with Policies and Procedures		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
8.4 Conduct routine maintenance	8.4.1 Container tags, labels, coupons are maintained according to appropriate regulatory agency and company specifications. 8.4.2 Pumps and generators and power supplies are free of contaminants that would impact temperature, pressure, level and flow according to company specifications. 8.4.3 Chemical tank sight glasses are calibrated, removed and repaired according to established company procedures. 8.4.4 Manual /computer generated readings are checked for discrepancies/errors according to company specifications	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Design Parameters Oil and Gas Processing and Equipment Record Keeping Ability to carry out routine blowdown and/or purge steps appropriate to condition	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 8: Comply with Policies and Procedures

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 8																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	3	4	3	2	2	2	3	2	2	2	2	2	3	3	2	2

Statement of Assessment for Critical Work Function 8

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

A. Written tests could include:

(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.

(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.

(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:

(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.

(2) Apply relevant knowledge or skills.

(3) Focus on the application of knowledge and skills to a new situation.

(4) Demonstrate an ability to plan, organize and create a product or an event.

(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.

(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 9. Monitor Electrical Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
9.1 Monitor generator equipment variables	9.1.1 Engine oil pressure meets manufacturer equipment specifications. 9.1.2 Engine water pressure meets manufacturer equipment specifications. 9.1.3 Generator outputs meet manufacturer equipment specifications. 9.1.4 24-volt backup system is operational and charged according to manufacturer and company specifications	Safe Working Practices Safety Systems Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Troubleshooting Operation Monitoring Operation Control Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 9. Monitor Electrical Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
9.2 Monitor primary and backup power sources	9.2.1 Electrical components operate according to NEC parameters. 9.2.2 Faulty components are isolated and replaced according to NEC specifications. 9.2.3 Uninterrupted service of electrical components is maintained according to NEC and company specifications. 9.2.4 Backup generator outputs meet manufacturer equipment and company specifications.	Safe Working Practices Safety Systems Environmental and Health Compliance Design Parameters Fuel Gas Electrical Power Sources Utility Systems Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 9: Maintain Electrical Systems

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 9																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	4	5	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 9

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:

(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:

(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 10. Maintain Auxiliary Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
10.1 Monitor and regulate flare scrubber variables	10.1.1 Flare scrubber pressure is within lowest operational condition for removing trapped fluids according to company specifications. 10.1.2 Flare scrubber level is within lowest operational condition for removing trapped fluids to prevent pollution according to company specifications. 10.1.3 Accumulated fluids are dumped according to company specifications. 10.1.4 Flare gas is measured to ensure compliance with monthly allowable volumes and wells contributing to flare according to appropriate regulatory agency specifications.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 10. Maintain Auxiliary Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
10.2 Adjust or repair safety devices	10.2.1 Fuel gas regulators are set to the correct pressure according to company specifications. 10.2.2 Pressure/level controllers are operational and set points established according to company specifications. 10.2.3 Secondary protection devices are within safe operational parameters according to company specifications.	Safe Working Practices Safety Systems Industry and Regulatory Standards Environmental and Health Compliance Process/Mechanical Flow Diagrams Process Symbols Design Parameters Oil and Gas Processing and Equipment Operation Control Testing Procedures Record Keeping	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 10. Maintain Auxiliary Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
10.3 Monitor and regulate fuel gas scrubber variables	10.3.1 Temperature readings meet equipment specifications according to company application. 10.3.2 Pressure meets equipment specifications according to company application. 10.3.3 Level meets equipment specifications according to company application. 10.3.4 Abnormal conditions in fuel gas scrubber are corrected and components are returned to service according to company specifications. 10.3.5 Fuel gas SDV closes when emergency shut down is activated according to company specifications. 10.3.6 Visible leaks and auditory leak evidence detected in gas scrubber during rounds are repaired according to company specifications.	Safe Working Practices Safety Systems Process/Mechanical Flow Diagrams Design Parameters Oil and Gas Processing and Equipment Troubleshooting Operation Monitoring Operation Control Fuel Gas	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 10. Maintain Auxiliary Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
10.4 Operate crane	10.4.1 Pre-use inspection is performed according to appropriate regulatory agency and company specifications. 10.4.2 Boat is loaded/unloaded without incident according to company specifications. 10.4.3 Run time and winch usage for maintenance schedule determination is documented according to company specifications. 10.4.4 Operators and riggers are qualified and trained in crane operations according to appropriate regulatory agency and company specifications. 10.4.5 Hearing protection is worn during crane operation according to company specifications.	Safe Working Practices Safety Systems Environmental Influences Industry and Regulatory Standards Design Parameters Material Handling	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Occupational Title: Oil and Gas Production Technician				
Critical Work Function 10. Maintain Auxiliary Systems		**Occupational Skills, Knowledge & Conditions**		
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**	
10.5 Monitor and regulate instrument air supply pressure to pneumatic panel	10.5.1 Control relay block and bleed manual switch is operating according to appropriate regulatory agency specifications. 10.5.2 Input/output air supply pressures are normal according to company good operating practices. 10.5.3 ESD and fusible plug loop pressures are normal according to appropriate regulatory agency and company operating specifications. 10.5.4 Air supply is monitored to ensure water and contaminants are removed before going into the pneumatic system according to company specifications.	Safe Working Practices Safety Systems Process/Mechanical Flow Diagrams Process Symbols Design Parameters Operation Control Troubleshooting Operation Monitoring Utility Systems	Pressure gauges Hand tools Temperature gauges Flashlight Calibrated test gauges Pumps Electrical meter Hand pumps Radio Writing utensils PPE Notepad Watch Sample bottles Centrifuge Hydrometer Beakers Gas sampling device	Hart communicator Hoses Valves Sorbent pads Buckets Test devices Locks and tags Flagging tape Signs Car seals Fire extinguisher pH strips Temperature sensing gun Cables and chains Lifting equipment Tool belt or bag Drivers

OIL AND GAS PRODUCTION TECHNICIAN SKILL STANDARDS

Academic and Employability Knowledge and Skill Matrix for Critical Work Function 10: Maintain Auxiliary Systems

On a scale of 1 (lowest) to 5 (highest), identify the level of complexity required in each of these skills for the worker to perform the critical work function. Keep in mind that this scale is not for rating an individual's proficiency. It is intended only for rating the level of complexity required to do the work.

Occupational Title: Oil and Gas Production Technician																
CWF 10																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	3	4	3	3	3	3	3	3	2	3	2	2	3	3	2	3

Statement of Assessment for Critical Work Function 10

The statements of assessment can do any of several things:

- *Define tools or strategies that industry could use to assess the level of competency a worker has attained in a particular critical work function.*
- *Define for trainers and educators how to assess the level of competency a student has attained relevant to the critical work function.*
- *Define the level of mastery of the critical work function that indicates that a worker or student has achieved an entry-, intermediate-, or advanced level of mastery of a critical work function.*

Tools & Strategy: The assessment process should include one or more of the following:

A. Written tests could include:

(1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
(2) Graphic representations (e.g. P&IDs and loop drawings) that reveal an understanding of symbology and connections between processes and devices.
(3) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge, skills and attitudes that could:

(1) Represent a real life scenario, problem or challenging situation in the context of a work environment.
(2) Apply relevant knowledge or skills.
(3) Focus on the application of knowledge and skills to a new situation.
(4) Demonstrate an ability to plan, organize and create a product or an event.
(5) Illustrate by individual performance the attained levels of knowledge, skills and attitudes.
(6)Include observation of events, groups and individuals that focuses on the relevant traits of the skill or attitude being observed.