



Model Curriculum

QP Name: Loading Operator - LPG/Propane

QP Code: HYC/Q6501

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

Hydrocarbon Sector Skill Council
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Training Parameters

Sector	Hydrocarbon
Sub-Sector	Downstream
Occupation	Operations –LPG/Propane (Gas Processing Plant/ Terminal/ Bottling Plant)
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO/2015 9333
Minimum Educational Qualification and Experience	5th Grade Pass with 4-years of relevant experience OR 8th Grade Pass with 1-year of relevant experience OR 9th Grade pass OR Grade 8th with one year of National Trade Certificate (NTC) after 8th
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	
Next Review Date	
NSQC Approval Date	
QP Version	1.0
Model Curriculum Creation Date	
Model Curriculum Valid Up to Date	
Model Curriculum Version	1.0
Minimum Duration of the Course	200
Maximum Duration of the Course	330 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- carrying out the loading activity of LPG/Propane (liquid hydrocarbon)
- Maintain Safe & Secure Working Environment
- Maintain Health & Hygiene Habits

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	Total Duration
Bridge Module	06:00	Nil	Nil	06:00
Module 1: Introduction to the Hydrocarbon sector and the job role of Loading Operator LPG-Propane	06:00	Nil	Nil	06:00
HYC/N6501 Carry out loading of LPG/Propane NOS Version No. –2.0 NSQF Level – 3	30:00	90:00	30:00	150:00
Module 2: Loading activity of LPG/Propane (liquid hydrocarbon)	30:00	90:00	30:00	150:00
HYC/N 9301 – Work effectively in a team NOS Version No. – 2.0 NSQF Level – 4	12:00	30:00	15:00	57:00
Module 3: Effective working in a team	12:00	30:00	15:00	57:00
HYC/N 9302 – Maintain Health Safety and Security procedures NOS Version No. – 2.0 NSQF Level – 4	12:00	30:00	15:00	57:00
Module 4: Health, safety and security	12:00	30:00	15:00	57:00
DGT/VSQ/N0102 - Employability Skills NOS Version No. – 1.0	-	-	-	60:00
Total Duration	60:00	150:00	60:00	330:00

Module Details

Module 1: Introduction to the Hydrocarbon sector and the job role of Loading Operator – (LPG/Propane)

Bridge Module

Terminal Outcomes:

- Discuss the Hydrocarbon Sector
- Discuss the job of a Loading Operator – (LPG/Propane)

Duration: 06:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the oil and natural gas sector and its subsectors. • Explain the importance of a Loading Operator – (LPG-Propane) • Explain the roles and responsibilities of Loading Operator – (LPG-Propane) 	
Classroom Aids:	
<ul style="list-style-type: none"> • White / Black board and Projector • Digital Presentation • Computer/Laptop • Public Addressing System 	
Tools, Equipment and Other Requirements	
NA	

Module 2: Carrying out the loading activity of LPG/Propane (liquid hydrocarbon)

Terminal Outcomes:

- Understanding of the importance of the use of PPE kits for loading activities
- Readiness of Storage sphere/Tank etc & hand tool equipment such as Pressure gauge (PG) Temperature gauge (TG) and Lower explosive limit (LEL) meter to be used to perform loading operations such as for loading of road tankers & rail wagons
- Understanding of correct positioning of tank-truck/ wagon as per standard marking and record the initial readings after earthing cable are connected
- monitor the level of LPG/Propane in the tanker using roto gauge
- sealing of the tanker as per instruction of the loading control room
- Preparation of delivery challan & handing over a copy of weighment slip
- Report to the fire safety team/in charge in case of spillage/ fire hazard and the situation is out of control

Duration: 30:00	Duration: 90:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain how to check the readiness of Non sparking hand tool equipment required for loading activity; all persons must be with proper PPE's. • Explain how to ensure that products sample (LPG/Propane) is within specified range in laboratory certificate of products • Describe how to ensure that the storage sphere/tank /vessel/mounded Bullet ready for loading operations/ transfer pumps/injection for loading of road tankers and rail wagons • Describe how to check readiness of testing equipment such as Pressure gauge (PG) Temperature gauge (TG) and Lower explosive limit (LEL) meter • Explain how to check the availability of fire extinguishers and fire-fighting equipment near the loading area and readiness for use if required. • Explain how to stay alert and observant to notice potential hazards in and around the storage area • Describe how to always adhere to the safety guidelines 	<ul style="list-style-type: none"> • Demonstrate on how to check readiness of Non sparking hand tool equipment required for loading activity; all persons must be with proper PPE's. • Demonstrate on how to ensure that the storage sphere/tank /vessel/mounded Bullet ready for loading operations/ transfer pumps/injection for loading of road tankers and rail wagons • Perform how to check readiness of testing equipment such as Pressure gauge (PG) Temperature gauge (TG) and Lower explosive limit (LEL) meter • Perform how to check the availability of fire extinguishers and fire-fighting equipment near the loading area and readiness for use if required. • Demonstrate on how to ensure that loading area free off any obstructions and for proper positioning of the tank-truck/ wagon in Gantry for loading operation • Perform to carry out/co-ordinate weighment of empty trucks/ wagons tare on the weighbridges • Demonstrate on how to ensure tank truck is parked safely in proper loading position as per standard marking, 'drive out' • Demonstrate on how to check the position in parking/secured area

	<ul style="list-style-type: none"> • Demonstrate on how to place wooden blocks properly to tires of tanker for no movement • Demonstrate on how to ensure that earthing cable are connected • Demonstrate on how to communicate with field staff and control room for individual truck details and specific loading points • Demonstrate on how to ensure correct positioning of truck/wagon with hand break applied and engine off and take the custody of ignition key in Gantry /loading bay • Demonstrate on how to record the initial reading of roto-gauge, tank level gauge and mass flow meter • Demonstrate on how to record the density and temperature of the product from flow meter. Inform TT (Truck Tanker) tareweight to C/R • Demonstrate on how to connect the loading arm & vapor arm for loading operation • Demonstrate on how to Ensure the connections are not loose (to avoided any leakage • Demonstrate on how to Ensure no spillage take place while handling of LPG/Propane in loading operation • Perform to check that the product level in tanker using roto gauge and does not exceed defined limit of loading capacity (85%) • Demonstrate on how to monitor the level of LPG/Propane in the tanker using roto gauge • Demonstrate on how to check that the product level in tank does not exceed defined limit for loading capacity • Demonstrate on how to close the valves of liquid & vapour arm and open valves of DP line of liquid & vapour arm for depressurization and then disconnect the loading arm • Demonstrate on how to record the final reading of roto-gauge, tank level gauge and mass flow meter • Demonstrate on reweighing of tanker / wagon after loading
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	<p>operation on the same weighbridge</p> <ul style="list-style-type: none"> • Checking on sealing of the tanker as per instruction of the loading control room • Demonstrate on how to Carry out degassing/purging of tanker /wagon as per procedure • Demonstrate on how to do Preparation/Coordinate the preparation of delivery challan • Demonstrate on how to hand over a copy of weighment slip • Report to the fire safety team/in charge in case of spillage/ fire hazard and the situation is out of control
<p>Classroom Aids:</p>	
<ul style="list-style-type: none"> • White / Black board and Projector • Digital Presentation • Computer/Laptop • Public Addressing System 	
<p>Tools, Equipment and Other Requirements</p>	
<p>Valve keys of sizes 0.5, 2, 3 (in inches), Ring spanner for tightening the Tanker unit flange (2 in x 300) - spanner size 24 x 26, Fastners and Spiral wound gaskets, Rail connector of size 2", D Spanner of size 52, Pressure gauge (PG) meter, Temperature gauge (TG) meter, Lower explosive limit (LEL) meter, PPE for Worker, Fire Fighting System, Delivery Challan book, Weighment slip sample, Roto Gauge, tank level gauge and mass flow meter</p>	

Module 3: Effective working in a team

Mapped to HYC/N6103 v 1.0

Terminal Outcomes:

- Describe how to interact with others effectively and appropriately.
- Demonstrate how to deal with colleagues at workplace

Duration: 12:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe methods to communicate clearly with the supervisor and reporting authorities. • Explain how to share information in line with organisational requirements. • Explain the organisation’s policies and procedures. • Explain how to identify causes of interpersonal conflict at workplace. • Describe ways/methods to resolve interpersonal conflict. • Explain the importance of gender equality. • Explain the importance of supporting and respecting colleagues and other members of the organisation without any bias based on gender, culture, disability etc. • Explain the importance of gender-neutral behaviour while interacting with others. 	<ul style="list-style-type: none"> • Demonstrate ways to handle interpersonal conflict at the workplace. • Demonstrate the ways of developing suitable rapport with other team members. • Demonstrate how to respond during emergencies. • Demonstrate how to communicate in a manner that is respectful of gender, culture and disability.
<ul style="list-style-type: none"> • Classroom Aids: 	
<ul style="list-style-type: none"> • White / Black board and Projector • Digital Presentation • Computer/Laptop • Public Addressing System 	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> • Dummy team 	

Module 4: Health, safety and security

Mapped to HYC/N6104 v 1.0

Terminal Outcomes:

- Identify the possible cause of accident and hazards
- Explain how to maintain safety and healthy environment
- Demonstrate how to use PPE kit at workplace

Duration: 12:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain importance of using PPE like face mask, hand gloves, goggle, protective clothing/equipment, etc. at workplace. • Explain how to monitor the health and safety of self and other team members. • Explain the hazard and risk associated with mishandling various tools and equipment. • Discuss safe work practices as per the company's guidelines and procedures. • Explain the good housekeeping practices to prevent any hazard. • Explain how to record and report all incidents, damages or injury. • Explain importance of personal and workplace hygiene. 	<ul style="list-style-type: none"> • Demonstrate how to appropriately wear and discard PPE kit. • Demonstrate how to respond promptly and appropriately to an accident. • Demonstrate how to administer first aid. • Demonstrate various rescue techniques. • Demonstrate how to use fire extinguishers. • Show the correct way to lift heavy objects.
Classroom Aids:	
<ul style="list-style-type: none"> • White / Black board and Projector • Digital Presentation • Computer/Laptop • Public Addressing System 	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> • First aid kit • Dummy for first aid treatment • Housekeeping kit • Personal Protective Equipment (PPE) 	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12 th Pass or ITI Pass	-	5	In relevant field	1	-	Total experience 6 years

Trainer Certification	
Domain Certification	Platform Certification
Certified for the Job Role: “Loading Operator - LPG/Propane”, mapped to QP: “HYC/Q6501, v1.0”. Minimum accepted score is 80%	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q2601, v1.0”. Minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
12th Pass or ITI Pass	-	5	In relevant field	1	-	Total 6 years

Assessor Certification	
Domain Certification	Platform Certification
Certified for the Job Role: “Loading Operator – LPG/Propane”, mapped to QP: “HYC/Q6501, v1.0”. Minimum accepted score is 80%	Certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2701, v1.0”. Minimum accepted score as per MEPSC guidelines is 80%.

Assessment Strategy

The assessment of candidates/trainees will be on the basis on assessment outcome/assessment criteria of the Qualification. In the assessment criteria for each NOS marks have been defined for theoretical and practical skills, on which the candidate will be assessed. The emphasis is on 'learning-by-doing' and performance criteria is based on the practical demonstration of skills and knowledge.

Theory/Knowledge test- This section will test the trainee on his/her knowledge on the subject/trade. The test will be carried out online/offline with a set of random Question paper. that include multiple choice questions in multilingual, True/False Statement, audio-video question etc.

The Question Bank will be developed by Subject Matter Experts (SME) of the hydrocarbon sector and these questions again be vetted by the Industry Experts, each performance criteria have its marks for theory based on the level of question i.e., easy, medium and difficult.

Practical/Demonstration Test- This stage involves the face-to-face interaction between Assessor and each trainee. The practical knowledge will be tested through trade test which demonstrates the skill required for the job, by which assessor would be able to evaluate the trainee for his/her practical knowledge on respective Qualification.

To ensure the maximum possible consistency in the assessment by different assessors at different locations, orientation of the assessors is also required about the stages involved in the assessment and the assessor role in the assessment process. The assessor must have knowledge of the following concepts before assessment:

- Qualification Pack Structure
- Guidance for the assessor to conduct theory and practical assessments
- Guidance for trainees to be given by assessor before the start of the assessments.
- Guidance on assessments process, practical brief with steps of operations practical observation checklist
- Practical/Demonstration Test guidance for uniformity and consistency.
- Guidance on assessment evidence collection (signed attendance copy, verification of the authenticity of the candidate by checking the photo ID card, Photographs-while assessment undergoing etc.)

The empaneled assessment agencies will be instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments. The assessment agencies are instructed to ideally have assessor with sufficient amount of relevant industry experience related to Qualification. The assessors will also have scrutinized and have to undergo orientation of assessment framework, competency-based assessments etc.

Recognition of Prior Learning (RPL)

Under the Recognition of Prior Learning (RPL), the candidates enrolled and the assessment will be carried out as per the assessment criteria and assessment outcome of the full Qualification and the process of assessment will be carry out by the body/bodies empaneled by Hydrocarbon Sector Skill Council

In RPL, the candidate already has the skills and knowledge while working on the job from long, the learners only require to undergo a brief orientation training and the subsequent assessment process and certification

is awarded to those candidates who successfully clears the assessment. The tentative process of RPL would include the following stages:

- 1 Cluster Mapping and Mobilization of the candidates
- 2 Counselling & Pre-Screening
- 4 Candidate registration, batch creation and enrolment
- 5 conductions of an orientation program for candidates before assessment
- 7 Assessment by HSSC
- 8 Evaluation of Assessment Result
- 9 Issuance of the Certificate to successful candidates

Assessment Strategy:

- For each Qualification Pack assessment criteria has been developed, which describe the weightage for each NOS/Performance criteria (PC) and assigned marks based on each NOS separately for theoretical and practical skills
- The question bank will be developed by the subject matter experts to assess the theoretical and practical knowledge.
- The accredited assessment agency will carry out the assessment process on the date proposed after completion of the training. The assessment will be carried out on the basis of the two parameters i.e. Theoretical test and Practical test.
- The result of the assessment will be shared by assessment body to the HSSC for review and compliance, after that result will be processed and certificates will be generated
- Assessments shall be conducted in the regional languages in case of any specific requirement from the concerned Training Provider.
- For ensuring the impartial assessment it will be ensured that the Assessment Bodies (AB) are not involved in any type of training delivery with respect to this project.

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score a minimum of 70% of % aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % aggregate for QP: 50%

References

Glossary

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

Acronyms and Abbreviations

Term	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
OS	Occupational Standard(s)
QP	Qualifications Pack
KU	Knowledge and understanding
GS	Generic Skills
LPG	Liquefied petroleum gas
PNG	Piped Natural Gas
FAQ	Frequently Asked Questions
BP	Business Partner
KYC	Know Your Consumer
FAB	Feature Advantage Benefit