

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR LOGISTICS SECTOR

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack: Tank Farm Associate (Options – Tank Farm Supervision)

SECTOR: LOGISTICS

SUB-SECTOR: Liquid Logistics

OCCUPATION: - Port Operation and Management (tank cleaning), Liquid Transport Operations (loading/unloading, pumping and pipeline) and Engineering/ Maintenance

REFERENCE ID: LSC/Q3511

ALIGNED TO: NCO – 2015 – 9333 and ISCO -08 - 9333

Brief Job Description: The individual operates pipeline for loading/unloading of cargo, cleans tanks, and monitors tanks for liquid level, pressure, emergency alarms etc.

Options

Option 1: Tank Farm Supervision

This unit is about supervision of operations, monitoring, inspecting and inventory tracking of tank farms

Personal Attributes:

The job holder should be medically and physically fit to operate liquid terminals and monitor tank farm operations. S/he should be observant and diligent in monitoring the alarms, gauges and meters during operations and maintenance.

Job Details

Qualifications Pack Code	LSC/Q3511		
Job Role	Tank farm associate		
Credits(NSQF)	TBD	Version number	1.0
Sector	Logistics	Drafted on	30/06/2018
Sub-sector	Liquid logistics	Last reviewed on	04/05/2019
Occupation	Tank farm operations	Next review date	04/05/2022
NSQC Clearance on	DD/MM/YYYY		
Effective from	DD/MM/YYYY		

Job Role	Tank farm associate
Role Description	The individual operates pipeline for loading/unloading of cargo, cleans tanks, and monitors tanks for liquid level, pressure, emergency alarms etc.
NSQF	3
Minimum Educational Qualifications	Diploma in Petrochemical/ Chemical Engineering/ Class XII pass with science group; candidate should have completed 18 years of age
Maximum Educational Qualifications	-
Prerequisite License or Training	Not Applicable for License.
Minimum Job Entry Age	18 years
Experience	Nil
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> LSC/N3521 Monitor tank operations and perform basic maintenance LSC/N3527 Assist in tank cleaning and residual collection LSC/N4307 Operate and maintain pipeline LSC/N4310 Assist in wagon/truck loading/unloading LSC/N9904 Maintain and monitor ethics and integrity in operations LSC/N3522 Follow health, safety and security procedures in liquid logistics <p>Options (Not mandatory):</p> <p>Option 1: Tank farm supervision 1.1 LSC/N3523 Perform tank farm inspections and inventory tracking</p>
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
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 atleast 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.
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.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational 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.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.

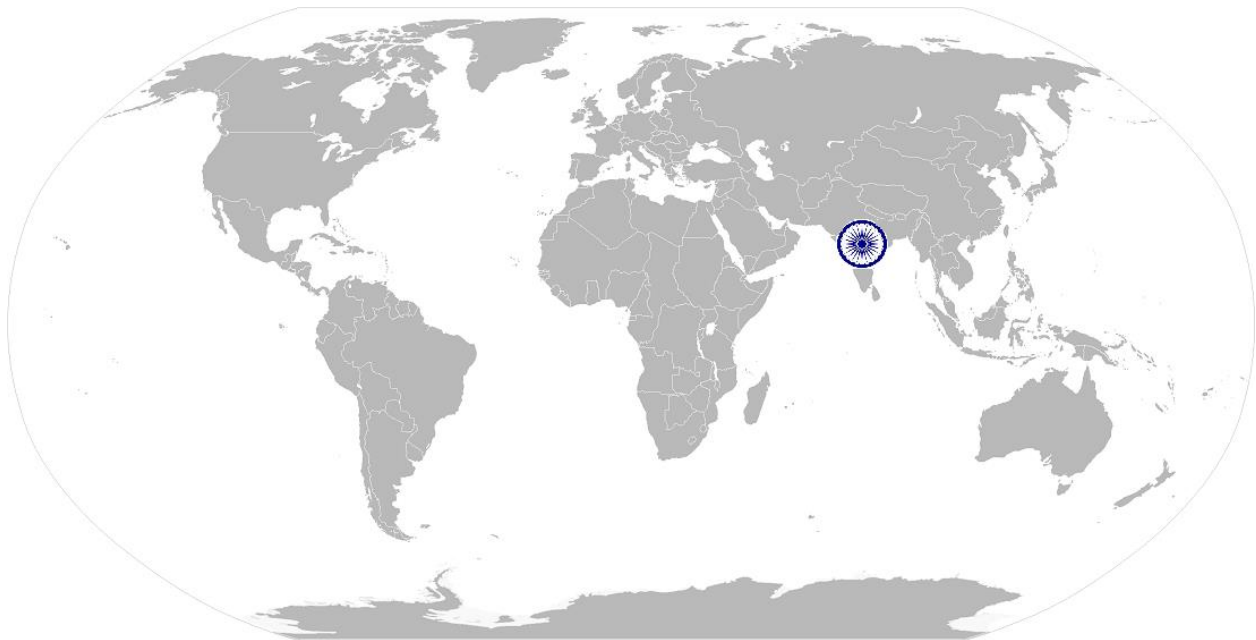
Qualifications Pack for Tank Farm Associate

Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the 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 the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.

Keywords /Terms	Description
API	American Petroleum Institute
ERP	Enterprise Resource Planning
EXIM	Export Import
HR	Human Resources
IEC	International Electrotechnical Commission
MHE	Material Handling Equipment
NFPA	National Fire Protection Association
NSQF	National Skills Qualifications Framework
OH&S	Occupational Health and Safety
OS	Occupational Standards
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
QP	Qualifications Pack
SOP	Standard Operating Procedures

Acronyms

National Occupational Standard



Overview

This unit is about monitoring the readings of different gauges to track tank status, conduct physical checks and performing basic maintenance

LSC/N3521 Monitor tank operations and perform basic maintenance

National Occupational Standard

Unit Code	LSC/N3521
Unit Title (Task)	Monitor tank operations and perform basic maintenance
Description	This unit is about monitoring the readings of different gauges to track tank status, conduct physical checks and perform basic maintenance
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Monitor tank operations • Perform basic maintenance activities <p>Range: Tank, control and measuring equipments, tools and tackles, fire fighting systems and alarms, consummables, Standard Operating Procedures (SOP), computer, projector, worksheets, etc.</p>
Performance Criteria(PC) w.r.t. the scope	
Element	Performance Criteria
Monitor tank operations	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. check readings of different tank operation gauges</p> <p>PC2. track reading of cargo levels, particularly range level for liquid and pressurised cargo</p> <p>PC3. monitor performance of pumps using the control unit</p> <p>PC4. check for fitness of firefighting systems and safety alarms</p>
Perform basic maintenance activities	<p>To be competent, the user/ individual must be able to:</p> <p>PC5. execute preventive maintenance check as per SOP</p> <p>PC6. perform physical rounds to check for tank integrity and report issues if any</p> <p>PC7. check and ensure that emergency pathways are not obstructed, and emergency systems are easily accessible</p> <p>PC8. check that valves and pumps function normally without any aberrations</p> <p>PC9. perform basic troubleshooting checks like surface painting, cleaning of exteriors, clearance for safety valves and emergency systems</p> <p>PC10. escalate issues that need external technical repairs, servicing and hazardous scenarios</p>
Knowledge and understanding (K)	
A. Organizational context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses</p> <p>KA2. security and safety procedures to be followed</p> <p>KA3. reporting structure of the organization and the supplier for escalation of issues</p> <p>KA4. risk and impact of not following defined procedures/work instructions</p> <p>KA5. coding system followed for different type of liquids and their distress codes</p>

LSC/N3521 Monitor tank operations and perform basic maintenance

<p>B. Technical knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. different type of cargo, their classification – A, B, C and their handling procedure and precautions</p> <p>KB2. SOPs for different operations, petro-chemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations</p> <p>KB3. using fire extinguisher and protocols for emergencies</p> <p>KB4. operations of control systems pumps, valves, alarm systems, etc.</p> <p>KB5. documentation requirement for different type of cargo and their handling</p> <p>KB6. handling and emergency procedures for hazardous cargo</p>
<p>Skills (S)</p>	
<p>A. Core skills/ generic skills</p>	<p>Reading skills</p> <p>The user/individual on the job needs to know how to read:</p> <p>SA1. written instructions</p> <p>SA2. ERP alarms, message and notifications</p> <p>SA3. checklists</p> <p>Writing skills</p> <p>The user/individual on the job needs to know how to write:</p> <p>SA4. monitoring report</p> <p>SA5. update maintenance logs</p> <p>Oral communication (listening and speaking skills)</p> <p>The user/individual on the job needs to know how to:</p> <p>SA6. communicate with supervisors, ground workforce, pumping attendants, transport operators</p>
<p>B. Professional skills</p>	<p>Decision making</p> <p>The user/individual on the job needs to know how to:</p> <p>SB1. decide and identify leakages if any</p> <p>SB2. identify damage or abnormalities in tank structure</p> <p>Plan and organize</p> <p>The user/individual on the job needs to know how to:</p> <p>SB3. plan and coordinate between teams to achieve joint goals.</p> <p>SB4. maintain punctuality and respond in a timely manner</p> <p>SB5. prioritize and execute tasks based on checklist and priority requirements</p> <p>SB6. do a check of activity completion</p> <p>Customer centricity</p> <p>The user/individual on the job needs to know how to:</p> <p>SB7. adhere to the assigned timelines</p> <p>SB8. address the urgency regarding shipments and emergencies</p> <p>Problem solving</p>

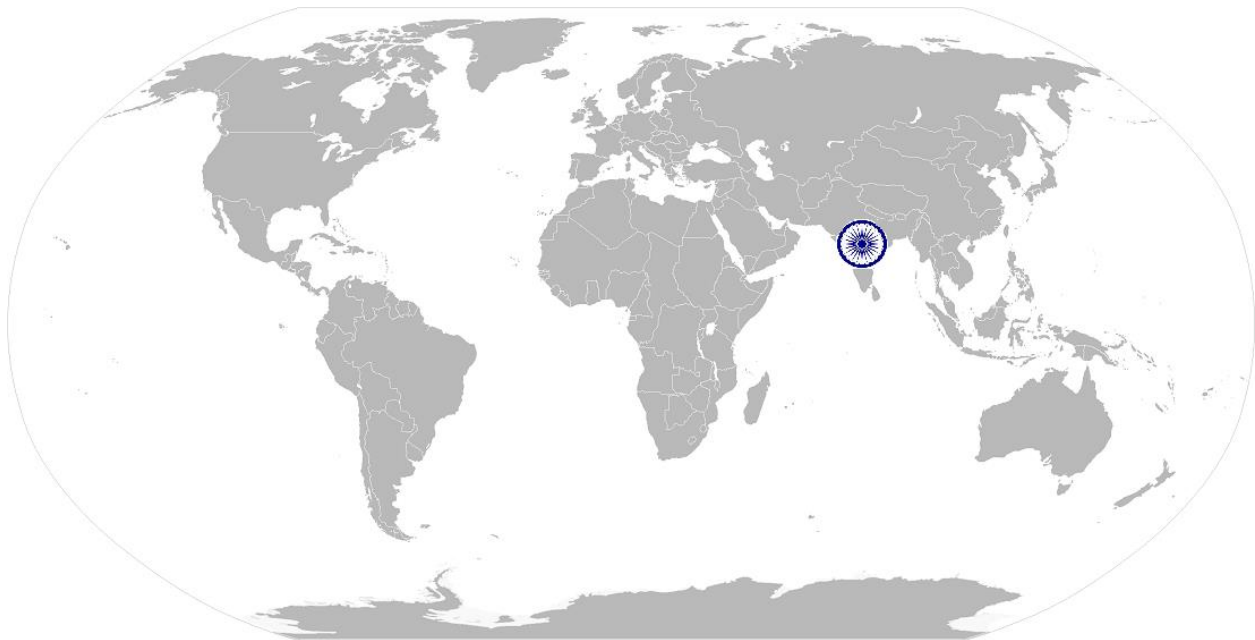
LSC/N3521 Monitor tank operations and perform basic maintenance

	The user/individual on the job needs to know how to: SB9. response procedure for fixing small leaks SB10. anticipate hazardous situations and raise alarms for preventive actions
	Analytical thinking
	The user/individual on the job needs to know how to: SB11. monitor gauges and identify anomalies SB12. estimate ageing of cargo and periodic requirement for tank maintenance
	Critical thinking
	The user/individual on the job needs to know and understand how to: SB13. identify if there is a leakage or fracture SB14. raise alarm and emergency response in case of hazardous situations

NOS Version Control

NOS Code	LSC/N3521		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Liquid logistics	Last reviewed on	28/03/2019
Occupation	Port Operation and Management (tank farm management)	Next review date	28/03/2022

National Occupational Standard



Overview

This unit is about assisting in residual collection and tank cleaning activities

LSC/N3527

Assist in tank cleaning and residual collection

National Occupational Standard

Unit Code	LSC/N3527
Unit Title (Task)	Assist in tank cleaning and residual collection
Description	This unit is about assisting in residual collection and tank cleaning activities
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Work safely • Residual collection • Dry cleaning • Wet cleaning • Steam cleaning • Chemical cleaning <p>Range: Tank, control and measuring equipment, tools and tackles, fire-fighting systems and alarms, cleaning equipment, consumables, Standard Operating Procedures (SOP), computer, projector, worksheets, etc.</p>
Performance Criteria(PC) w.r.t. the scope	
Element	Performance Criteria
Work safely	<p>To be competent, the user/individual must be able to:</p> <p>PC1. adhere to procedures and guidelines for Personal Protective Equipment (PPE) and other relevant safety regulations while performing cleaning and collection</p> <p>PC2. ensure that all hand tools and equipment used are in a safe and serviceable condition</p> <p>PC3. ensure work area is clean and safe from hazards</p>
Residual collection	<p>To be competent, the user/ individual must be able to:</p> <p>PC4. pump the liquid out of the storage tank as per SOP</p> <p>PC5. measure the residual oil in tank to ensure that the concentration of oil and gas are within a safe range</p> <p>PC6. use chemical additives and hydrocarbon diluents to liquefy solid sludge deposits</p> <p>PC7. extract the liquid using standard pumping and liquid circulation arrangements</p> <p>PC8. ventilate the tank to expel the gas and oil from the tank</p> <p>PC9. dispose the residue in a safe manner as per SOP</p>
Dry cleaning	<p>To be competent, the user/ individual must be able to:</p> <p>PC10. enter the tank and clean the tank floor and lower walls using sawdust</p> <p>PC11. remove the sawdust and the local corrosion using tools</p> <p>PC12. thoroughly mop and clean the floor and walls</p>
Wet cleaning	<p>To be competent, the user/ individual must be able to:</p> <p>PC13. clean the tank with pressurised water as per SOP</p> <p>PC14. drain the sewage liquid and clean the tank using mop</p> <p>PC15. ventilate with dry wind for dehumidification</p>

LSC/N3527

Assist in tank cleaning and residual collection

	PC16. remove local corrosion using tools
Steam cleaning	To be competent, the user/ individual must be able to: PC17. clean the oil tank with steam PC18. wash tough oil with high pressure stream PC19. clean thoroughly with mop
Chemical cleaning	To be competent, the user/ individual must be able to: PC20. wash the tank using tank cleaning chemicals PC21. allow pickling and de-rusting as per procedural timelines PC22. remove the acid and clean the tank with water PC23. drain sewage and perform passivation treatment PC24. wash the tank with high pressure water PC25. drain sewage and clean the tank using mop PC26. ventilate with dry air for dehumidification
Knowledge and understanding (K)	
A. Organizational context (Knowledge of the company / organization and its processes)	The individual on the job needs to know and understand: KA1. organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses KA2. security and safety procedures to be followed KA3. reporting structure of the organization and the supplier for escalation of issues KA4. risk and impact of not following defined procedures/work instructions KA5. coding system followed for different type of liquids and their distress codes
B. Technical knowledge	The individual on the job needs to know and understand: KB1. different type of cargo, their classification – A, B, C and their handling procedure and precautions KB2. SOPs for different operations, petrochemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations KB3. using fire extinguisher and protocols for emergencies, pollution and leakages KB4. operations of control systems pumps, valves, alarm systems, etc. KB5. documentation requirement for different type of cargo and their handling KB6. different type of cleaning methods, systems and equipment and their use for specific cargo KB7. various risks associated with different cargo when cleaning
Skills (S)	
C. Core skills/ generic skills	Reading skills The user/individual on the job needs to know how to read: SA1. written instructions SA2. maintenance and service logs, pressure and level gauges

LSC/N3527

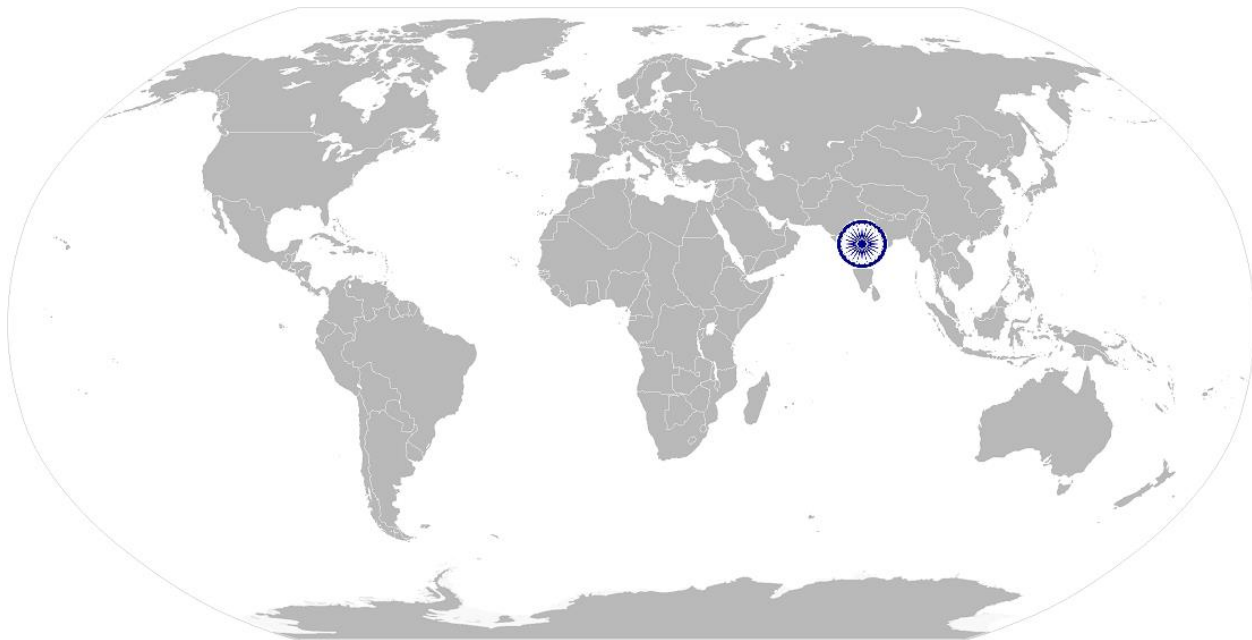
Assist in tank cleaning and residual collection

	SA3. checklists
	Writing skills
	The user/individual on the job needs to know how to write: SA4. cleaning reports SA5. cleaning and maintenance logs
	Oral communication (listening and speaking skills)
	The user/individual on the job needs to know how to: SA6. communicate with supervisors, managers, third party cleaning agents
	D. Professional skills
Decision making	The user/individual on the job needs to know how to: SB1. identify corrosion while cleaning and clear it SB2. assess if all the residual cargo has been removed SB3. decide if de-humidification, cleaning process is complete and tank is fit for loading
Plan and organize	The user/individual on the job needs to know how to: SB4. plan and coordinate between teams to achieve joint goals. SB5. maintain punctuality and respond in a timely manner SB6. prioritize and execute tasks based on checklist and priority requirements
Customer centricity	The user/individual on the job needs to know how to: SB7. adhere to the assigned timelines SB8. address the urgency and precautions regarding cleaning process
Problem solving	The user/individual on the job needs to know how to: SB9. anticipate requirement for cleaning – removal of rust, residual, etc. SB10. anticipate residual cargo in tank and ways to extract it
Analytical thinking	The user/individual on the job needs to know how to: SB11. assess the variation in loading and unloading to estimate residual cargo
Critical thinking	The user/individual on the job needs to know and understand how to: SB12. identify if there is a leakage, fracture or corrosion SB13. identify emergencies and raise alarms, during cleaning process

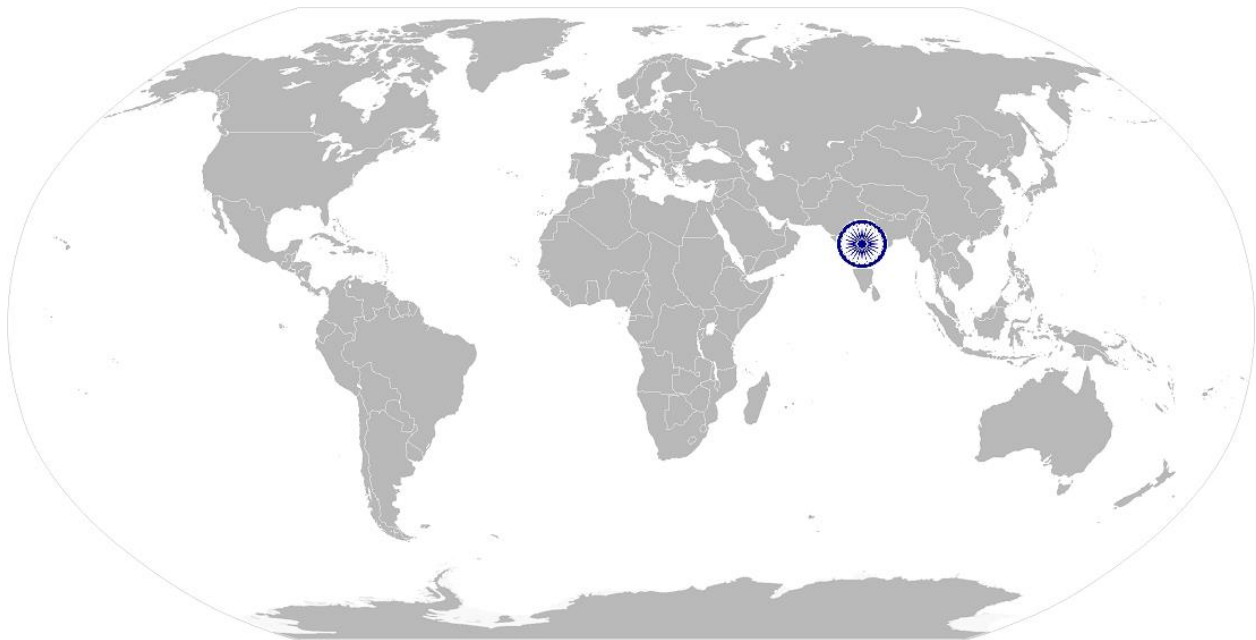
LSC/N3527 Assist in tank cleaning and residual collection

NOS Version Control

NOS Code	LSC/N3527		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Liquid logistics	Last reviewed on	28/03/2019
Occupation	Port Operation and Management (tank farm management)	Next review date	28/03/2022



National Occupational Standard



Overview

This unit is about flushing, maintaining and operating the pipeline

LSC/N4307

Operate and maintain pipeline

National Occupational Standard

Unit Code	LSC/N4307
Unit Title (Task)	Operate and maintain pipeline
Description	This OS unit is about operation, maintaining and monitoring of pumps
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Flush pipeline • Make pipeline connection and operate pumps • Check for pressure and resolve issues along the pipeline <p>Range: Tank, pipelines, control and measuring equipment, tools and tackles, fire-fighting systems and alarms, liquid cargo, control console, consumables, Standard Operating Procedures (SOP), computer, projector, worksheets, etc.</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Flush pipeline	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. perform chemical alkali flushing followed by acidic flushing to remove dirt, contamination, etc.</p> <p>PC2. perform filter check at both ends to ensure clean and turbulent movement of flush</p> <p>PC3. monitor the pressure of the flush at different gauges installed in the pipeline and provide information to pipeline control unit</p> <p>PC4. report to control unit once flushing is complete</p>
Make pipeline connection and operate pumps	<p>To be competent, the user/ individual must be able to:</p> <p>PC5. make connections using valves and angles, and connect the pipeline to the vessel for release of cargo</p> <p>PC6. check pipeline connection with storage tank for any leaks, seal tight closure and pressure in gauges where connections have been made</p> <p>PC7. operate the pumps for transfer of cargo from vessel to tank or vice versa</p> <p>PC8. check for collection and operate drainage taps at bends and crests in pipelines</p>
Check for pressure and resolve issues along the pipeline	<p>To be competent, the user/ individual must be able to:</p> <p>PC9. observe the pressure and the temperature in the pipeline using various pressure and temperature gauges installed</p> <p>PC10. monitor reading of the same and escalate to control room in-case it crosses threshold limits</p> <p>PC11. check for leakages or severed connections when pressure drops, make necessary adjustments and provide a go ahead of releasing cargo again</p> <p>PC12. provide report to the supervisor regarding cargo transferred, any technical challenges, accidents, damages, etc.</p>
Knowledge and understanding (K)	

LSC/N4307

Operate and maintain pipeline

<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses</p> <p>KA2. security and safety procedures to be followed</p> <p>KA3. reporting structure of the organization and the supplier for escalation of issues</p> <p>KA4. risk and impact of not following defined procedures/work instructions</p> <p>KA5. coding system followed for different type of cargo and their distress codes</p>
<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know:</p> <p>KB1. basic technicalities and controls and switches used to operate the pipeline</p> <p>KB2. various signs and signals used for operations and emergencies at the port</p> <p>KB3. SOPs for handling hazardous goods</p> <p>KB4. response to emergencies e.g. fire</p> <p>KB5. pre-operation checklist and post operation checklists</p> <p>KB6. safety regulations while operating the pipeline</p> <p>KB7. optimal working condition at the port and various precautions to be taken because of weather</p> <p>KB8. the control systems, greasing and other technical requirement for the pipeline</p> <p>KB9. various pipeline components and their functions</p> <p>KB10. how to test and safely carry out maintenance tasks on the pipeline</p> <p>KB11. how to identify deviations from normal operations</p> <p>KB12. basic of port and yard layouts</p> <p>KB13. type of vessels and sops for cargo movement in each type</p> <p>KB14. different type of cargo, their classification – A, B, C and their handling procedure and precautions</p> <p>KB15. SOPs for different operations, petrochemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations</p> <p>KB16. using fire extinguisher and protocols for emergencies, pollution and leakages</p> <p>KB17. operations of control systems pumps, valves, alarm systems, etc.</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Reading Skills</p> <p>The user/individual on the job needs to know how to read:</p> <p>SA1. labels and codes as per company procedures</p> <p>SA2. various signals and flags in port, liquid terminal and vessel operations</p> <p>SA3. handling instructions/company log books and records</p> <p>SA4. SOPs and safety manuals and safety signs at the port</p> <p>SA5. instructions and orders</p> <p>Writing Skills</p>

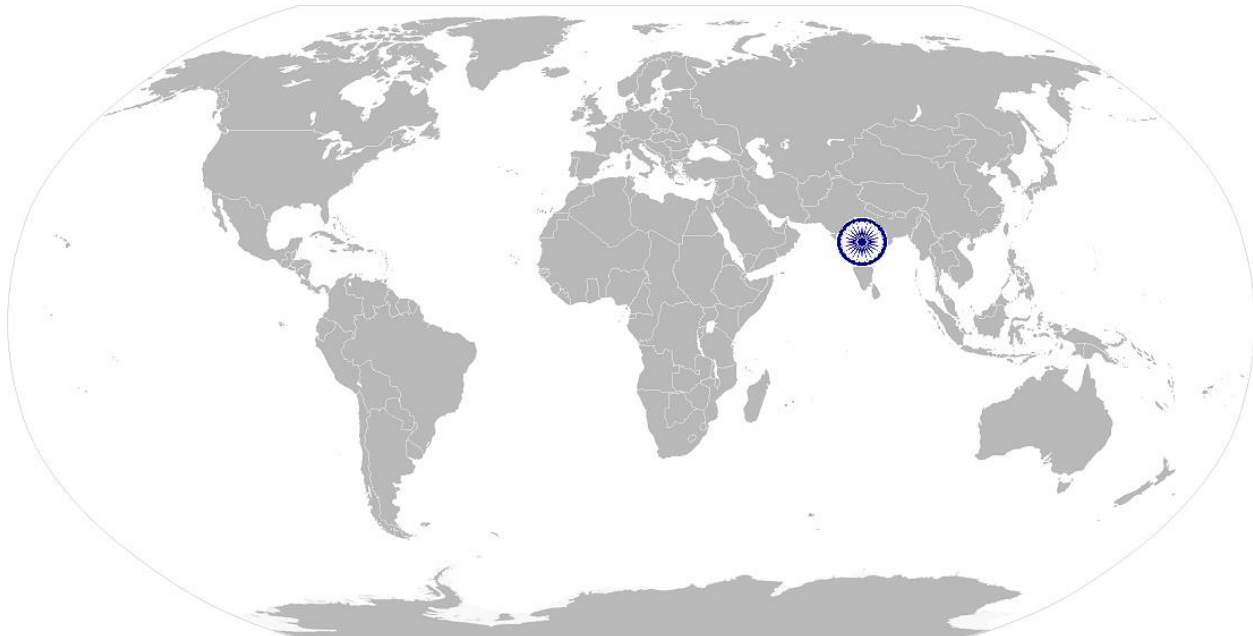
LSC/N4307

Operate and maintain pipeline

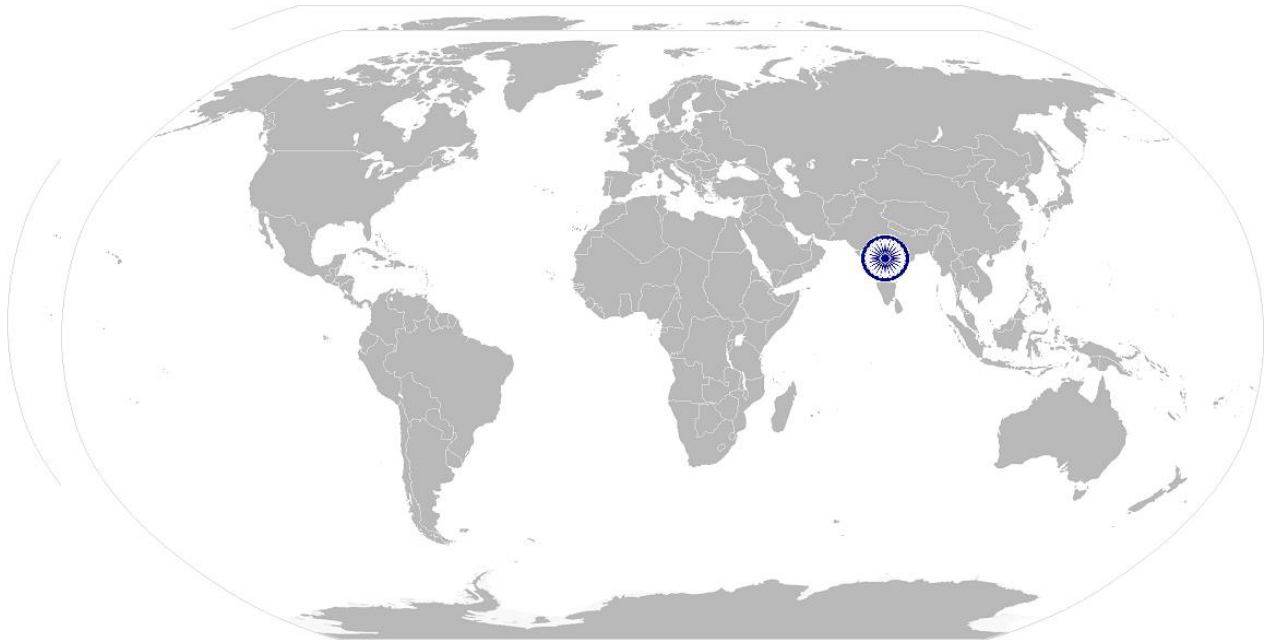
	<p>The user/individual on the job needs to know how to:</p> <p>SA6. fill out checklists, maintenance logbooks detailing maintenance activities conducted</p> <p>SA7. prepare detailed technical reports</p> <p>SA8. note down condition of pipeline and any maintenance or repair that was carried out</p>
	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SA9. communicate clearly with supervisors, port attendants, terminal attendants and other staff</p> <p>SA10. provide advice and guidance to peers and juniors</p>
B. Professional Skills	<p>Decision Making</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB1. decide if the pipeline is fit for operations</p> <p>SB2. identify leakages and their positions</p> <p>SB3. decide the appropriate methods to plug leakages</p>
	<p>Plan and Organize</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB4. clearly coordinate with ground staff for smooth operations</p> <p>SB5. prioritize and execute tasks within the scheduled time limits</p> <p>SB6. maintain schedules and punctuality</p> <p>SB7. be a team player and achieve joint goals</p>
	<p>Customer Centricity</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB8. adhere to the timelines and ensure that they are met</p> <p>SB9. operate the pipeline with proper care so as to avoid damage or spillage</p>
	<p>Problem Solving</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB10. handle basic repairs and trouble shooting in the pipeline</p> <p>SB11. drain stuck liquid using draining taps and flushing operations</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB12. suggest methods to streamline cargo transfers via pipeline</p> <p>SB13. assess the condition of pipeline for maintenance/ servicing if required</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know how to:</p> <p>SB14. clearly follow instructions and coordinate with ground staff</p> <p>SB15. take necessary precautions while operating pipeline transfers</p>

NOS Version Control

NOS Code	LSC/N4307		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Port terminals, ICDs and CFS	Last reviewed on	28/03/2019
Occupation	Liquid transport operations (Pumping and pipeline)	Next review date	28/03/2022



National Occupational Standard



Overview

This unit is about loading/unloading of trucks and wagons at liquid terminals and tank depots

LSC/N4310

Assist in wagon/truck loading /unloading

Unit Code	LSC/N4310
Unit Title (Task)	Assist in wagon/truck loading /unloading
Description	This unit is about loading/unloading of trucks and wagons at liquid terminals and tank depots
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Check wagon/tanker prior to loading/unloading • Perform loading/unloading <p>Range: Tank, wagon/truck, weighbridge, pipelines, pumping equipment, control and measuring equipment, tools and tackles, fire-fighting systems and alarms, liquid cargo, control console, consumables, Standard Operating Procedures (SOP), computer, projector, worksheets, etc.</p>
Performance Criteria(PC) w.r.t. the scope	
Element	Performance Criteria
Check wagon/tanker prior to loading/unloading	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. verify tanker and wagon documents such as license, registrations, fire extinguisher license, and vehicle inspection reports, etc.</p> <p>PC2. perform physical verification of the vehicle with respect to vehicle fitness and transportation of cargo</p> <p>PC3. check that internal stop valve, external stop valves and all closing devices are closed and functioning</p> <p>PC4. check weight and pressure of the tanker/wagon and make note</p> <p>PC5. perform a dipstick sample check on the cargo to verify composition</p> <p>PC6. report vehicle readiness to transport cargo</p>
Perform loading/unloading	<p>To be competent, the user/ individual must be able to:</p> <p>PC7. connect the pipeline to loading/unloading station, operate pump and set the meter as per specification</p> <p>PC8. monitor loading/unloading volume and pressure in the meter</p> <p>PC9. check that there is no spillage or residue post loading/unloading</p> <p>PC10. disconnect pipeline post loading/unloading, record the meter and take acknowledgement for the transporter regarding tank volume</p> <p>PC11. prepare handover report and submit it to supervisor</p>
Knowledge and understanding (K)	

LSC/N4310

Assist in wagon/truck loading /unloading

<p>A. Organizational context (Knowledge of the company / organization and its processes)</p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses</p> <p>KA2. security and safety procedures to be followed</p> <p>KA3. reporting structure of the organization and the supplier for escalation of issues</p> <p>KA4. risk and impact of not following defined procedures/work instructions</p> <p>KA5. coding system followed for different type of liquids and their distress codes</p>
<p>B. Technical knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. different type of cargo, their classification – A, B, C and their handling procedure and precautions</p> <p>KB2. SOPs for different operations, petrochemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations</p> <p>KB3. using fire extinguisher and protocols for emergencies, pollution and leakages and precautions during loading/unloading</p> <p>KB4. operations of control systems pumps, valves, alarm systems, etc.</p> <p>KB5. documentation requirement for different type of cargo and their handling</p> <p>KB6. different type of wagons, trucks, their limitations and capacities as well as basic checks to be performed</p> <p>KB7. various risks associated with loading/unloading</p> <p>KB8. various documents of trucks, wagons to be verified prior to loading/unloading</p>
<p>Skills (S)</p>	
<p>C. Core skills/ generic skills</p>	<p>Reading skills</p> <p>The user/individual on the job needs to know how to read:</p> <p>SA1. written instructions</p> <p>SA2. maintenance and service logs, pressure and level gauges, pumping meters</p> <p>SA3. checklists</p> <p>Writing skills</p> <p>The user/individual on the job needs to know how to write:</p> <p>SA4. loading/ unloading reports</p> <p>SA5. inventory logs</p> <p>Oral communication (listening and speaking skills)</p> <p>The user/individual on the job needs to know how to:</p> <p>SA6. communicate with supervisors, managers, third party transporters</p>
<p>D. Professional skills</p>	<p>Decision making</p> <p>The user/individual on the job needs to know how to:</p> <p>SB1. identify leakage or fracture in transport, nozzle or pump</p> <p>SB2. assess if all the residual cargo has been removed</p>

LSC/N4310

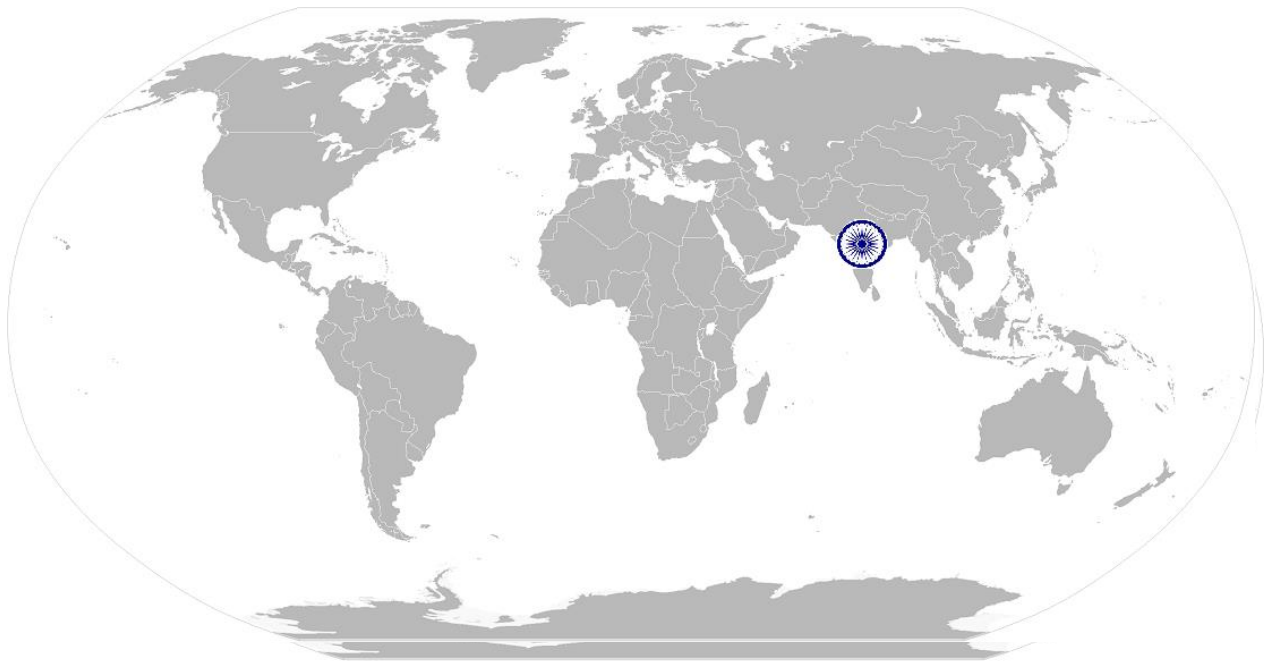
Assist in wagon/truck loading /unloading

	SB3. decide if transport vehicle is fit of transport
	Plan and organize
	The user/individual on the job needs to know how to:
	SB4. plan and coordinate between teams to achieve joint goals.
	SB5. maintain punctuality and respond in a timely manner
	SB6. prioritize and execute tasks based on checklist and priority requirements
	Customer centricity
	The user/individual on the job needs to know how to:
	SB7. adhere to the assigned timelines
	SB8. address the urgency and precautions regarding loading/unloading
	Problem solving
	The user/individual on the job needs to know how to:
SB9. anticipate risks during loading/unloading and take necessary precautions	
SB10. anticipate residual cargo in tank and ways to extract it	
Analytical thinking	
The user/individual on the job needs to know how to:	
SB11. assess the variation in loading and unloading to estimate residual cargo	
Critical thinking	
The user/individual on the job needs to know and understand how to:	
SB12. identify if there is a leakage, fracture or corrosion	
SB13. identify emergencies and raise alarms	

NOS Version Control

NOS Code	LSC/N4310		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Liquid logsitics	Last reviewed on	28/03/2019
Occupation	Liquid transport operations (Loading/unloading)	Next review date	28/03/2022

National Occupational Standard



Overview

This unit is about maintaining integrity, ensuring data security, and professional and ethical practices.

LSC/N9904

Maintain and monitor integrity and ethics in operation

National Occupational Standard

Unit Code	LSC/N9904
Unit Title (Task)	Maintain integrity and ethics in operation
Description	This OS unit is about maintaining integrity, ensuring data security, and professional and ethical practices
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Maintain integrity and ensure data security • Professional and ethical practices • Ensure regulatory compliance <p>Range: Standard Operating Procedures (SOP), worksheets, computer, projector, printer, display board and markers</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Maintain integrity ensuring data security	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. refrain from indulging in corrupt practices</p> <p>PC2. avoid using company's funds, property or resources for undertaking personal activities</p> <p>PC3. protect customer's information and ensure it is not misused</p> <p>PC4. protect data and information related to business or commercial decisions</p>
Professional and ethical practices	<p>To be competent, the user/ individual must be able to:</p> <p>PC5. avoid acceptance of cash or kind from vendors for support or contract negotiations</p> <p>PC6. demonstrate and practice ethics in day-to-day processes and dealings with customers and colleagues</p> <p>PC7. avoid nepotism</p> <p>PC8. consult supervisor or senior management when in situations that may require differentiating between ethical and unethical</p> <p>PC9. report promptly all violations of code of ethics</p> <p>PC10. dress up and conduct in a professional manner</p> <p>PC11. communicate with clients and stakeholders in a soft and polite manner</p> <p>PC12. follow etiquettes in accordance to the place</p>
Ensure regulatory compliance	<p>To be competent, the user/ individual must be able to:</p> <p>PC13. check for regulatory documentation and compliances for the shop floor as per information from the supervisor</p> <p>PC14. perform activities considering the regulatory requirements</p> <p>PC15. use PPEs in accordance to regulatory requirements</p> <p>PC16. identify the different types of dangerous goods and handling methodologies</p> <p>PC17. follow the SOP for handling of different types of dangerous goods</p>

LSC/N9904

Maintain and monitor integrity and ethics in operation

	<p>PC18. consult supervisor or senior management when in situations that may require differentiating between ethical and unethical</p> <p>PC19. promptly report all regulatory violations</p>
<p>Knowledge and understanding (K)</p>	
<p>A. Organizational context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company’s policies on use of language</p> <p>KA2. company’s Human Resources policies</p> <p>KA3. company’s code of ethics</p> <p>KA4. company’s whistle blower policy</p> <p>KA5. company’s rules related to sexual harassment</p> <p>KA6. company’s reporting structure</p> <p>KA7. company’s documentation policy</p>
<p>B. Technical knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. principles of code of ethics and business ethics</p> <p>KB2. various regulatory requirements</p> <p>KB3. documentary compliance for various regulations</p> <p>KB4. different dangerous shipment</p> <p>KB5. regulations w.r.t dangerous shipment</p>
<p>Skills (S)</p>	
<p>A. Core skills/ generic skills</p>	<p>Reading Skills</p> <p>The individual on the job needs to know how to read:</p> <p>SA1. company policy documents and work related documents</p> <p>SA2. emails and written instructions</p> <p>Writing Skills</p> <p>The individual on the job needs to know how to fill:</p> <p>SA3. documentation pertaining to ethics and regulatory requirement</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The individual on the job needs to know how to communicate with:</p> <p>SA4. team members to work efficiently</p> <p>SA5. peers and subordinates about information security and building trust</p>
<p>B. Professional skills</p>	<p>Decision making</p> <p>The individual on the job needs to know how to:</p> <p>SB1. identify a shipment as dangerous goods</p> <p>SB2. assess if the situation needs to be reported regarding regulations</p> <p>Plan and Organize</p> <p>The individual on the job needs to know how to:</p> <p>SB3. plan and organise actions as per company’s guidelines</p> <p>Customer centricity</p> <p>The individual on the job needs to know how to:</p>

LSC/N9904

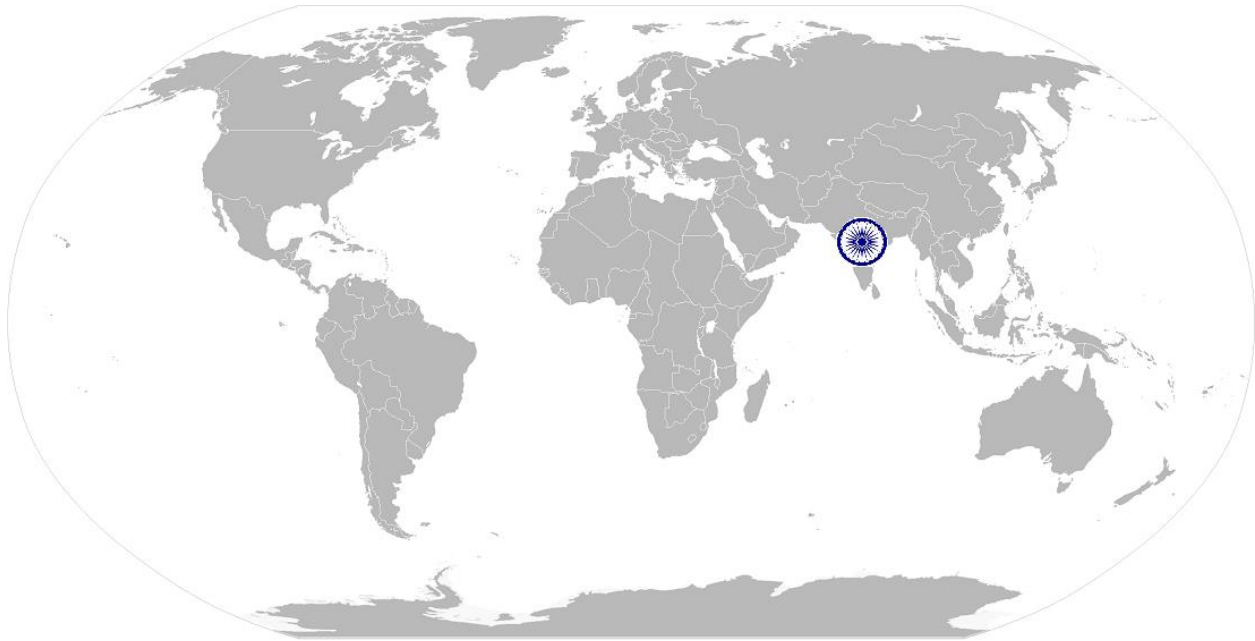
Maintain and monitor integrity and ethics in operation

	SB4. prevent company and customer information leakage
	Problem solving
	The individual on the job needs to know how to:
	SB5. advise colleagues regarding sensitive issues pertaining to conduct and regulations
	Analytical Thinking
	The individual on the job needs to know how to:
	SB6. provide professional services diligently and with integrity
	Critical Thinking
The individual on the job needs to know how to:	
SB7. avoid defaming company's name by indulging into pilferage or fiddling with quality or quantity of shipment	
SB8. be fair and reasonable in profession and disclose conflict of interests	

NOS Version Control

NOS Code	LSC/N9904		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Sub-Sector	Generic	Last reviewed on	28/03/2019
Occupation	Generic	Next review date	28/03/2022

National Occupational Standard



Overview

This unit is about ensuring compliance with health, safety and security procedures at the workplace

LSC/N3522

Follow health, safety and security procedures in liquid logistics

Unit Code	LSC/N3522
Unit Title (Task)	Follow health, safety and security procedures in liquid logistics
Description	This OS unit is about ensuring compliance with health, safety and security procedures at the workplace
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Follow health, safety and security procedures • Ensure compliance to health, safety and security • Prepare for disaster and pollution control response <p>Range: Personal Protective Equipment (PPE), Material Handling Equipment (MHE), instructional material, alarms, safety guidelines, safety signs, computer, projector etc.</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Follow health, safety and security procedures	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. make note of all safety checks and comply with safety regulations</p> <p>PC2. wear PPE such as goggles, ear plugs, helmet, mask, shoes, etc. as required</p> <p>PC3. follow standard driving and equipment/ machine operating practice</p> <p>PC4. follow protocol to initiate action in case of signs of any emergency situation like accident or breach of safety</p> <p>PC5. undertake periodical preventive health check ups</p> <p>PC6. follow necessary standard operating procedures (SOP) and precautions while handling dangerous and hazardous shipment</p> <p>PC7. follow security procedures like green gate in port, customs area, factory security, etc.</p>
Ensure compliance to health, safety and security	<p>To be competent, the user/ individual must be able to:</p> <p>PC8. identify unsafe conditions and practices and report it to concerned authority</p> <p>PC9. implement 5S at workplace</p> <p>PC10. inspect the activity area and equipment for safe working condition</p> <p>PC11. check that pathways/ emergency escape routes are clear and free from grease/ oil</p> <p>PC12. participate in fire drills</p> <p>PC13. follow standard material handling procedures</p> <p>PC14. hold ladders, platforms and hand rails in a safe position</p> <p>PC15. check that the safety and security related tags, labels and signage are placed on cargo</p> <p>PC16. report in case of any violation</p>
Prepare for disaster and pollution control	To be competent, the user/ individual must be able to:

LSC/N3522

Follow health, safety and security procedures in liquid logistics

<p>response</p>	<p>PC17. raise alarms and inform supervisors in case of any emergency - fire, leakage, or pollution</p> <p>PC18. coordinate with local authorities and nearby village representatives for evacuation</p> <p>PC19. follow SOP to contain the disaster or pollution – use fire extinguisher, start emergency controls, close emergency valves, etc.</p> <p>PC20. assist fellow workers in quick response and evaluation as per SOP</p>
<p>Knowledge and understanding (K)</p>	
<p>A. Organizational context (Knowledge of the company / organization and its processes)</p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. health, safety and security policies and procedures</p> <p>KA2. special instructions for hazardous cargo handling</p> <p>KA3. defined standard operating procedures</p> <p>KA4. risk and impact of not following defined procedures/work instructions with reference to health, safety and security operations</p> <p>KA5. escalation matrix for reporting identified problem</p>
<p>B. Technical knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. basics of Occupational Safety and Health Administration (OSHA)</p> <p>KB2. 5S implementation and practice</p> <p>KB3. different type of cargo, their classification – A, B, C and their handling procedure and precautions</p> <p>KB4. SOPs for different operations, petrochemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations</p> <p>KB5. using fire extinguisher and protocols for emergencies</p> <p>KB6. operations of control systems pumps, valves, alarm systems, etc.</p> <p>KB7. necessary security procedures for airport, customs area, etc.</p> <p>KB8. tools and equipment for material handling</p> <p>KB9. standard material handling procedures while handling cargo</p> <p>KB10. safety and security signage and their functions</p> <p>KB11. different security tags, labels and signage</p> <p>KB12. handling procedure for hazardous / fragile cargo</p> <p>KB13. security procedures for dangerous / hazardous shipment</p> <p>KB14. different PPE, their usage and purpose</p> <p>KB15. safe driving techniques</p>
<p>Skills (S)</p>	
<p>A. Core skills/ generic skills</p>	<p>Reading skills</p> <p>The user/individual on the job needs to know how to read:</p> <p>SA1. SOPs and safety precautions for different ground operations and handling cargo</p>

LSC/N3522

Follow health, safety and security procedures in liquid logistics

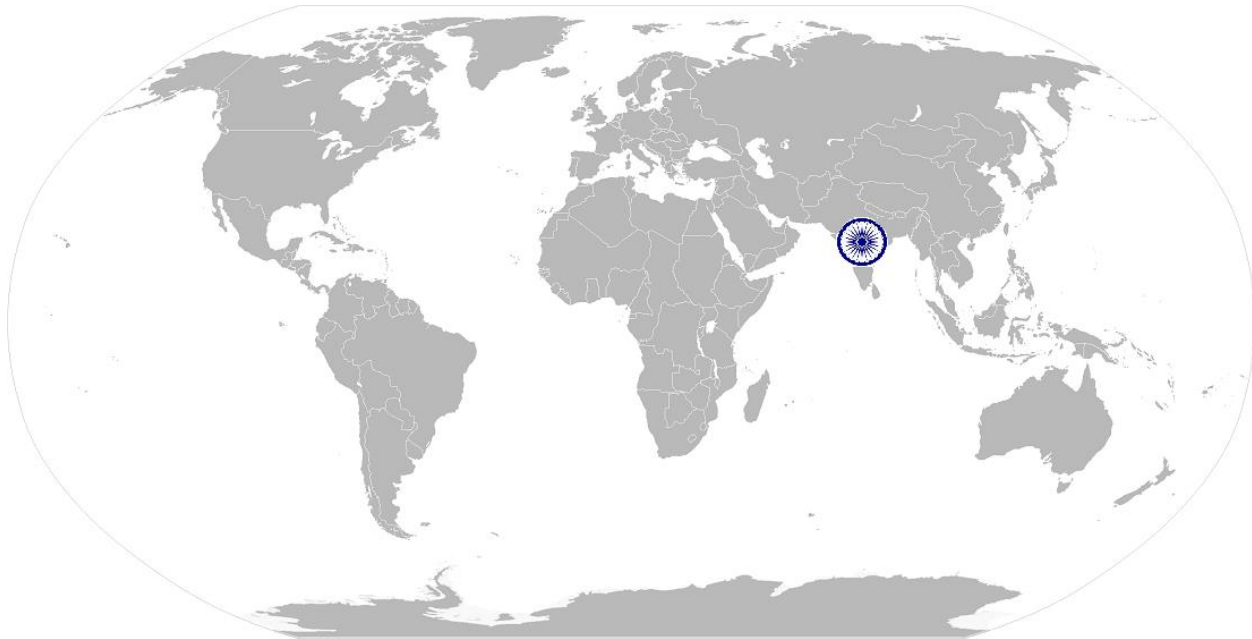
	SA2. alarms, various gauges and meters regarding temperature, pressure and level
	SA3. different documents related to security and movement of cargo
	Writing skills
	The user/individual on the job needs to know how to: SA4. fill forms related to health, safety and security procedures SA5. prepare reports regarding pollution and disaster control, accidents, etc.
	Oral communication (listening and speaking skills)
	The user/individual on the job needs to know how to: SA6. communicate clearly with colleagues regarding safety procedures SA7. share experience and guide peers SA8. coordinate with local authorities and disaster management teams
B. Professional skills	Decision making
	The user/individual on the job needs to know how to: SB1. decide how to avoid any damage / accident to personal health / cargo handled, whenever required SB2. act objectively, rather than impulsively or emotionally when faced with difficult/stressful or emotional situations
	Plan and organize
	The user/individual on the job needs to know how to: SB3. plan clearance of area with safety of nearby population and workforce as top priority SB4. prioritize and execute tasks within the schedule time limits SB5. plan and drive based on traffic and road condition using radio links/navigation aids wherever available
	Customer centricity
	The user/individual on the job needs to know how to: SB6. ensure safe and secure movement of liquid, cargo at all times
	Problem solving
	The user/individual on the job needs to know how to: SB7. identify any threats on personal health, safety, security, etc. and take appropriate actions SB8. identify risks at the workplace and address them
	Analytical thinking
	The user/individual on the job needs to know how to: SB9. analyse past mistakes and address them to avoid mishap in the future
	Critical thinking
The user/individual on the job needs to know how to: SB10. check that right safety measures and procedures are in place SB11. quickly escalate and begin disaster management response	

LSC/N3522

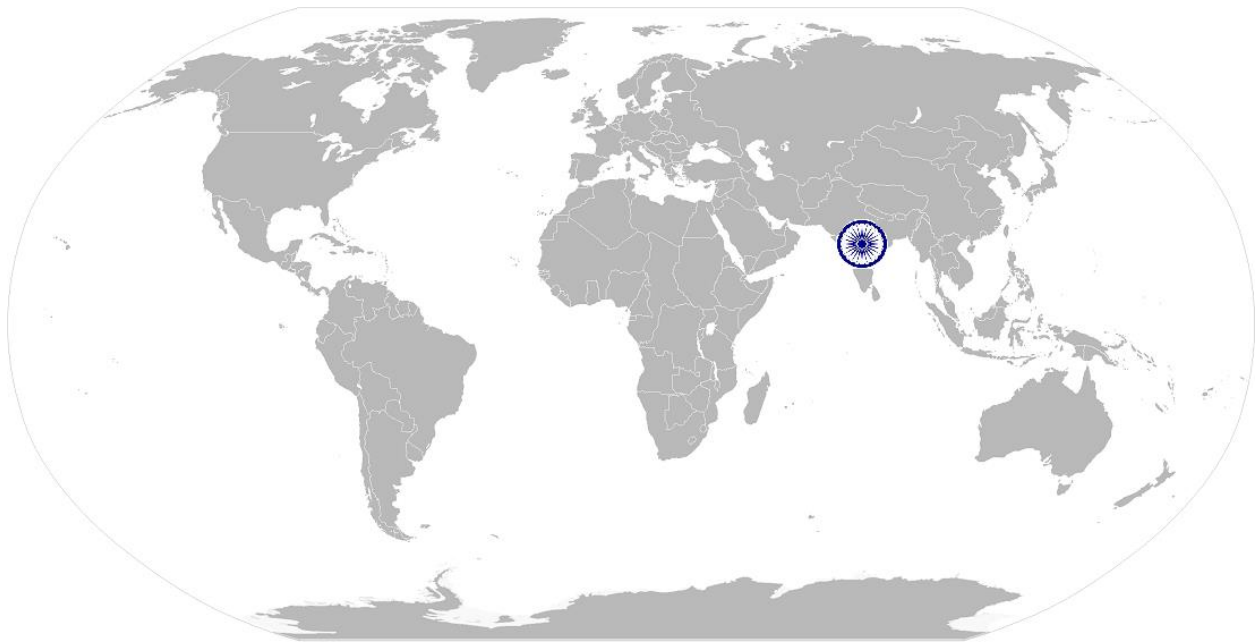
Follow health, safety and security procedures in liquid logistics

NOS Version Control

NOS Code	LSC/N3522		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Port Terminals, ICD and CFS	Last reviewed on	28/03/2019
Occupation	Port operation and management (tank farm management)	Next review date	28/03/2022



National Occupational Standard



Overview

This unit is about performing tank farm inspection and inventory tracking

LSC/N3523

Perform tank farm inspections and inventory tracking

National Occupational Standard

Unit Code	LSC/N3523
Unit Title (Task)	Perform tank farm inspections and inventory tracking
Description	This unit is about inspecting tank farms and monitoring inventory
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Inspection of tank farm • Inventory tracking <p>Range: Tank, pipelines, control and measuring equipment, tools and tackles, liquid cargo, control console, consumables, Standard Operating Procedures (SOP), computer, projector, worksheets, etc.</p>
Performance Criteria(PC) w.r.t. the scope	
Element	Performance Criteria
Inspection of tank farm	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. inspect tanks to check for operational integrity of tank farm</p> <p>PC2. note down preventative maintenance works to be executed</p> <p>PC3. check that all pumps, pipelines are functioning and are free from corrosion</p> <p>PC4. check and ensure that emergency systems are working</p> <p>PC5. escalate issues that need external technical repairs, servicing and hazardous scenarios and take necessary precautionary actions</p>
Inventory tracking	<p>To be competent, the user/ individual must be able to:</p> <p>PC6. monitor daily inventory report with regards to pressure, temperature and cargo levels to check for losses, if any</p> <p>PC7. take preventive actions and review tank parameters if cargo loss is more than the prescribed limits</p> <p>PC8. estimate loss and prepare reports regarding the loss, controls and other monitoring parameters for the manager</p>
Knowledge and understanding (K)	
A. Organizational context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses</p> <p>KA2. security and safety procedures to be followed</p> <p>KA3. reporting structure of the organization and the supplier for escalation of issues</p> <p>KA4. risk and impact of not following defined procedures/work instructions</p> <p>KA5. coding system followed for different type of liquids and their distress codes</p>

LSC/N3523

Perform tank farm inspections and inventory tracking

<p>B. Technical knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. different type of cargo, their classification – A, B, C and their handling procedure and precautions</p> <p>KB2. SOPs for different operations, petrochemical standards – International Electrotechnical Commission (IEC) 61511, IEC 61508, American Petroleum Institute (API) 2350, National Fire Protection Association (NFPA), Oil industry safety directorate guidelines and various committee recommendations</p> <p>KB3. using fire extinguisher and protocols for emergencies</p> <p>KB4. operations of control systems, pumps, valves, alarm systems, etc.</p> <p>KB5. documentation requirement for different type of cargo and their handling</p> <p>KB6. handling and emergency procedures for hazardous cargo</p> <p>KB7. current events regarding liquid tank farms happening across the world including new technologies and best practices</p> <p>KB8. various common mistakes and precautions to be taken in tank farms</p>
<p>Skills (S)</p>	
<p>C. Core skills/ generic skills</p>	<p>Reading skills</p> <p>The user/individual on the job needs to know how to read:</p> <p>SA1. written instructions</p> <p>SA2. Enterprise Resource Planning (ERP) alarms, gauges and meters, message and notifications, daily reports</p> <p>SA3. checklists</p> <p>Writing skills</p> <p>The user/individual on the job needs to know how to write:</p> <p>SA4. monitoring and inspection reports</p> <p>SA5. instructions</p> <p>SA6. training pedagogy</p> <p>Oral communication (listening and speaking skills)</p> <p>The user/individual on the job needs to know how to:</p> <p>SA7. communicate with supervisors, ground workforce, pumping attendants, transport operators</p> <p>SA8. coordinate with local authorities, external support agencies</p>
<p>D. Professional skills</p>	<p>Decision making</p> <p>The user/individual on the job needs to know how to:</p> <p>SB1. identify anomaly in operations</p> <p>SB2. identify damage or abnormalities in tank structure</p> <p>SB3. decide on need for servicing, repair and training</p> <p>Plan and organize</p> <p>The user/individual on the job needs to know how to:</p> <p>SB4. plan and coordinate between teams to achieve joint goals.</p>

LSC/N3523

Perform tank farm inspections and inventory tracking

	SB5. maintain punctuality and respond in a timely manner
	SB6. prioritize and execute tasks based on checklist and priority requirements
	SB7. do a check of activity completion
	Customer centricity
	The user/individual on the job needs to know how to:
	SB8. adhere to the assigned timelines
	SB9. address the urgency regarding cargo and emergencies
	Problem solving
The user/individual on the job needs to know how to:	
SB10. anticipate need for repair or maintenance in tanks	
SB11. anticipate additional precautions to be taken for different operations	
SB12. coordinate with manager, external stakeholders to quickly address issues	
Analytical thinking	
The user/individual on the job needs to know how to:	
SB13. analyse trends of cargo level, alarms, servicing requirement, etc. to draw inferences and future requirements	
SB14. analyse trend of type of cargo stored to understand future requirement	
SB15. estimate ageing of cargo and periodic requirement for tank maintenance	
Critical thinking	
The user/individual on the job needs to know and understand how to:	
SB16. anticipate and identify hazardous situations and take necessary precautions	
SB17. raise alarm and quick emergency response in case of hazards and accidents	
SB18. monitor inventory to track losses, theft, etc.	

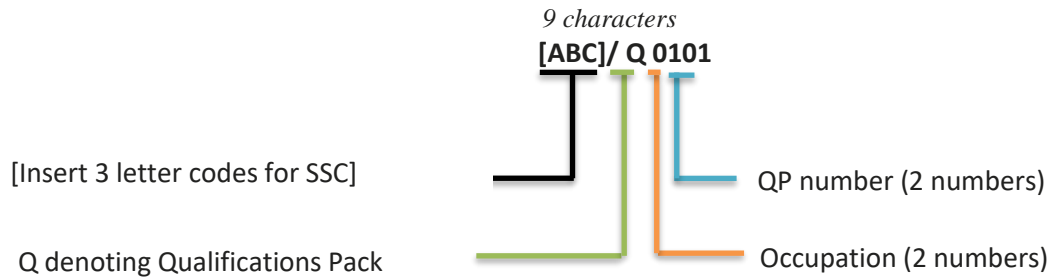
NOS Version Control

NOS Code	LSC/N3523		
Credits(NSQF)	TBD	Version number	1.0
Industry	Logistics	Drafted on	30/06/2018
Industry Sub-sector	Liquid logistics	Last reviewed on	28/03/2019
Occupation	Port Operation and Management (tank farm management)	Next review date	28/03/2022

Annexure

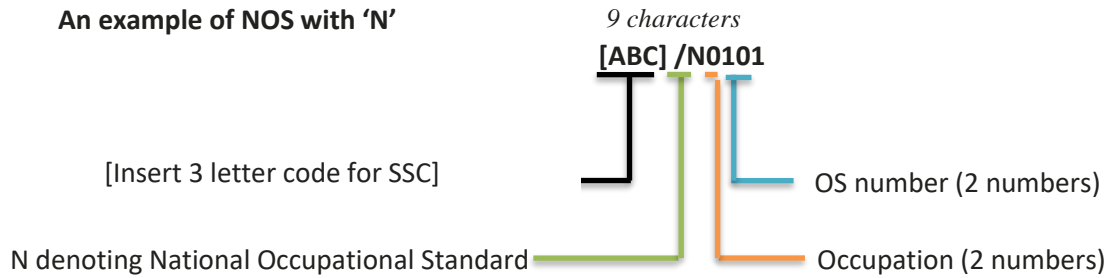
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



Qualification pack for Tank Farm Associate

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Warehousing	1 to 9
Land Transportation	10 to 14
EXIM/ Freight Forwarding/ Customs Clearance	21 to 23
Courier/Express	15 to 20
E-Commerce	24 to 30
Supply Chain	31 to 34
Port Terminals, ICD and CFS	35 to 41
Inland Waterways	42 to 46
Liquid Logistics	47 to 49
Air Cargo Operations	61 to 62
Rail Logistics	50 to 55
Cold Chain Logistics	86 to 94
Generic Occupations	95 to 99

Sequence	Description	Example
Three letters	Industry name	LSC
Slash	/	/
Next letter	Whether QP or NOS	Q / N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

Qualification pack for Tank Farm Associate

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Tank farm associate

Qualification Pack LSC/Q3511

Sector Skill Council Logistics

Guidelines for Assessment

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

Compulsory NOS					
Total Marks: 600				Marks Allocation	
Assessment Outcomes	Assessment Criteria for Outcomes	Total Marks	Out of	Theory	Skills Practical
LSC/N3521 Monitor tank operations and perform basic maintenance	PC1. check readings of different tank operation gauges	100	10	3	7
	PC2. track reading of cargo levels, particularly range level for liquid and pressurised cargo		10	3	7
	PC3. monitor performance of pumps using the control unit		10	3	7
	PC4. check for fitness of firefighting systems and safety alarms		10	3	7
	PC5. execute preventive maintenance check as per SOP		10	3	7
	PC6. perform physical rounds to check for tank integrity and report issues if any		10	3	7
	PC7. check and ensure that emergency pathways are not obstructed, and emergency systems are easily accessible		10	3	7
	PC8. check that valves and pumps function normally without any aberrations		10	3	7

Qualification pack for Tank Farm Associate

	PC9. perform basic troubleshooting checks like surface painting, cleaning of exteriors, clearance for safety valves and emergency systems		10	3	7
	PC10. escalate issues that need external technical repairs, servicing and hazardous scenarios		10	3	7
			100	30	70
LSC/N3527 Assist in tank cleaning and residual collection	PC1. adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing cleaning and collection	100	5	2	3
	PC2. ensure that all hand tools and equipment used are in a safe and serviceable condition		5	2	3
	PC3. ensure work area is clean and safe from hazards		5	2	3
	PC4. pump the liquid out of the storage tank as per SOP		4	1	3
	PC5. measure the residual oil in tank to ensure that the concentration of oil and gas are within a safe range		4	1	3
	PC6. use chemical additives and hydrocarbon diluents to liquefy solid sludge deposits		5	2	3
	PC7. extract the liquid using standard pumping and liquid circulation arrangements		4	1	3
	PC8. ventilate the tank to expel the gas and oil from the tank		4	1	3
	PC9. dispose the residue in a safe manner as per SOP		4	1	3
	PC10. enter the tank and clean the tank floor and lower walls using sawdust		4	1	3
	PC11. remove the sawdust and the local corrosion using tools		4	1	3
	PC12. thoroughly mop and clean the floor and walls		4	1	3
	PC13. clean the tank with pressurised water as per SOP		4	1	3
	PC14. drain the sewage liquid and clean the tank using mop		4	1	3

Qualification pack for Tank Farm Associate

	PC15. ventilate with dry wind for dehumidification		4	1	3
	PC16. remove local corrosion using tools		4	1	3
	PC17. clean the oil tank with steam		4	1	3
	PC18. wash tough oil with high pressure stream		4	1	3
	PC19. clean thoroughly with mop		3	1	2
	PC20. wash the tank using tank cleaning chemicals		3	1	2
	PC21. allow pickling and de-rusting as per procedural timelines		3	1	2
	PC22. remove the acid and clean the tank with water		3	1	2
	PC23. drain sewage and perform passivation treatment		3	1	2
	PC24. wash the tank with high pressure water		3	1	2
	PC25. drain sewage and clean the tank using mop		3	1	2
	PC26. ventilate with dry air for dehumidification		3	1	2
			100	30	70
LSC/N4307 Operate and maintain pipeline	PC1. perform chemical alkali flushing followed by acidic flushing to remove dirt, contamination, etc.	100	9	3	6
	PC2. perform filter check at both ends to ensure clean and turbulent movement of flush		9	3	6
	PC3. monitor the pressure of the flush at different gauges installed in the pipeline and provide information to pipeline control unit		9	3	6
	PC4. report to control unit once flushing is complete		8	2	6
	PC5. make connections using valves and angles, and connect the pipeline to the vessel for release of cargo		9	3	6
	PC6. check pipeline connection with storage tank for any leaks, seal tight closure and pressure in gauges where connections have been made		9	3	6
	PC7. operate the pumps for transfer of cargo from vessel to tank or vice versa		9	3	6

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	PC8. check for collection and operate drainage taps at bends and crests in pipelines		8	2	6
	PC9. observe the pressure and the temperature in the pipeline using various pressure and temperature gauges installed		8	2	6
	PC10. monitor reading of the same and escalate to control room in-case it crosses threshold limits		8	2	6
	PC11. check for leakages or severed connections when pressure drops, make necessary adjustments and provide a go ahead of releasing cargo again		7	2	5
	PC12. provide report to the supervisor regarding cargo transferred, any technical challenges, accidents, damages, etc.		7	2	5
			100	30	70
LSC/N4310 Assist in wagon/truck loading/unloading	PC1. verify tanker and wagon documents such as license, registrations, fire extinguisher license, and vehicle inspection reports, etc.	100	10	3	7
	PC2. perform physical verification of the vehicle with respect to vehicle fitness and transportation of cargo		10	3	7
	PC3. check that internal stop valve, external stop valves and all closing devices are closed and functioning		10	3	7
	PC4. check weight and pressure of the tanker/wagon and make note		9	3	6
	PC5. perform a dipstick sample check on the cargo to verify composition		10	3	7
	PC6. report vehicle readiness to transport cargo		9	3	6
	PC7. connect the pipeline to loading/unloading station, operate pump and set the meter as per specification		9	3	6
	PC8. monitor loading/unloading volume and pressure in the meter		9	3	6
	PC9. check that there is no spillage or residue post loading/unloading		8	2	6

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	PC10. disconnect pipeline post loading/unloading, record the meter and take acknowledgement for the transporter regarding tank volume		8	2	6
	PC11. prepare handover report and submit it to supervisor		8	2	6
			100	30	70
LSC/N9904 Maintain and monitor integrity and ethics in operations	PC1. refrain from indulging in corrupt practices	100	5	2	3
	PC2. avoid using company's funds, property or resources for undertaking personal activities		5	2	3
	PC3. protect customer's information and ensure it is not misused		5	2	3
	PC4. protect data and information related to business or commercial decisions		5	2	3
	PC5. avoid acceptance of cash or kind from vendors for support or contract negotiations		5	2	3
	PC6. demonstrate and practice ethics in day-to-day processes and dealings with customers and colleagues		5	2	3
	PC7. avoid nepotism		5	2	3
	PC8. consult supervisor or senior management when in situations that may require differentiating between ethical and unethical		6	2	4
	PC9. report promptly all violations of code of ethics		5	2	3
	PC10. dress up and conduct in a professional manner		5	2	3
	PC11. communicate with clients and stakeholders in a soft and polite manner		5	2	3
	PC12. follow etiquettes in accordance to the place		5	2	3
	PC13. check for regulatory documentation and compliances for the shop floor as per information from the supervisor		6	2	4
	PC14. perform activities considering the regulatory requirements		5	2	3
	PC15. use PPEs in accordance to regulatory requirements		6	3	3

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	PC16. identify the different types of dangerous goods and handling methodologies		6	3	3
	PC17. follow the SOP for handling of different types of dangerous goods		6	2	4
	PC18. consult supervisor or senior management when in situations that may require differentiating between ethical and unethical		5	2	3
	PC19. promptly report all regulatory violations		5	2	3
			100	40	60
LSC/N3522 Follow health, safety and security procedures in liquid logistics	PC1. make note of all safety checks and comply with safety regulations	100	6	2	4
	PC2. wear personal protective equipment (PPE) such as goggles, ear plugs, helmet, mask, shoes, etc. as required		6	2	4
	PC3. follow standard driving and equipment/ machine operating practice		6	2	4
	PC4. follow protocol to initiate action in case of signs of any emergency situation like accident or breach of safety		6	2	4
	PC5. undertake periodical preventive health check ups		6	2	4
	PC6. follow necessary standard operating procedures (SOP) and precautions while handling dangerous and hazardous shipment		6	2	4
	PC7. follow security procedures like green gate in port, customs area, factory security, etc.		6	2	4
	PC8. identify unsafe conditions and practices and report it to concerned authority		6	2	4
	PC9. implement 5S at workplace		6	2	4
	PC10. inspect the activity area and equipment for safe working condition		6	2	4
	PC11. check that pathways/ emergency escape routes are clear and free from grease/ oil		4	1	3
	PC12. participate in fire drills		4	1	3

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PC13. follow standard material handling procedures	4	1	3
PC14. hold ladders, platforms and hand rails in a safe position	4	1	3
PC15. check that the safety and security related tags, labels and signage are placed on cargo	4	1	3
PC16. report in case of any violation	4	1	3
PC17. raise alarms and inform supervisors in case of any emergency - fire, leakage, or pollution	4	1	3
PC18. coordinate with local authorities and nearby village representatives for evacuation	4	1	3
PC19. follow SOP to contain the disaster or pollution – use fire extinguisher, start emergency controls, close emergency valves, etc.	4	1	3
PC20. assist fellow workers in quick response and evaluation as per SOP	4	1	3
	100	30	70

Options					
Option 1 - Tank farm supervision					
Total marks 100				Marks allocation	
Assessment outcome	Assessment criteria	Total marks	Out of	Theory	Skills Practical
LSC/N3523 Perform tank farm inspections and inventory tracking	PC1. inspect tanks to check for operational integrity of tank farm	100	13	4	9
	PC2. note down preventative maintenance works to be executed		13	4	9
	PC3. check that all pumps, pipelines are functioning and are free from corrosion		13	4	9
	PC4. check and ensure that emergency systems are working		13	4	9
	PC5. escalate issues that need external technical repairs, servicing and hazardous scenarios and take necessary precautionary actions		11	3	8
	PC6. monitor daily inventory report		11	3	8

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	with regards to pressure, temperature and cargo levels to check for losses, if any				
	PC7. take preventive actions and review tank parameters if cargo loss is more than the prescribed limits		13	4	9
	PC8. estimate loss and prepare reports regarding the loss, controls and other monitoring parameters for the manager		13	4	9
			100	30	70

Annexure: Trainer qualification and equipment requirement

Trainer Qualification –

- Diploma in Chemical or Petrochemical with minimum 3 years of experience in tank farm operations
- Detailed knowledge of tank gauges, monitoring systems, emergency alarms and responses, loading, unloading and cleaning activities.
- Has supervisory skills with good knowledge of IT and control systems in tank farms, and reporting and data management skills
- The trainer should have the ability to read write and communicate in vernacular language and English

Training equipment- MIS, ERP, vessel and loading/unloading equipment, import, export and vessel documentation, teaching board, MHEs, pallet truck, Tank, wagon/truck, weighbridge, pipelines, pumping equipment, control and measuring equipment, tools and tackles, fire-fighting systems and alarms, liquid cargo, control console, consumables, SOP, computer, projector, worksheets, etc.